THE RELATIONSHIP BETWEEN PERCEPTION OF LEADERSHIP BEHAVIOR, EFFECTIVENESS, AND CREATIVITY OF SECONDARY SCHOOL PRINCIPALS IN MARYLAND

by

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ABSTRACT

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Earl Thomas Matthews, Doctor of Philosophy, 1978

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The broad purpose of this study is to contribute knowledge to the selection of school principals. Specifically, the purpose of the study is to examine the relationships among measures of the variables of creativity, views of leader behavior, and effectiveness of secondary principals to determine variables that can be used for the selection, placement, and evaluation of secondary principals.

Selected for participation in this study were 50 schools from school districts in Maryland. All teachers within the identified sample were requested to complete the Check List for the Evaluation of Secondary Principals (CLESP). By random procedures teachers were identified to complete the Leader Behavior Description Questionnaire-XII (LBDQ-XII) which indicated their perceptions of their principal's leader behavior. Each principal was requested to complete the AC Test of Creative Ability, a paper-and-pencil test which can be administered to individuals or groups to estimate the creative potential of an individual.

Findings

1. The data provided evidence that at the .05 level creativity

is not significantly related to perceptions of leader behavior of secondary principals.

2. The data provided evidence that at the .05 level creativity is not signficantly related to effectiveness of secondary principals.

3. There was a significant (.05 level) relationship established between scores secondary principals receive relative to their perceived leader behavior and measures of their effectiveness.

4. No significant relationship at the .05 level was found between the interaction effect of creative ability of principals with measures of their perceived leader behavior and effectiveness.

Conclusions

The findings of the study suggest that the following conclusions may be drawn.

1. The creative ability of secondary principals is not directly related to the leader behavior that they exhibit.

2. The effectiveness of secondary principals as measured in this study is not directly related to their creative ability.

3. Generally, the effectiveness of secondary principals is directly related to their exhibited and perceived leader behavior. Specifically, those principals who are effective are perceived by their teachers as individuals who can: handle conflicting demands; accept postponement and do not worry about outcomes of new procedures; have strong convictions and utilize arguments effectively; encourage initiative in their teachers and encourage teachers to use good judgement; are friendly and approachable; have things turn out right for them; build team work within their building; and are working to get to the top.

On the other hand, the effectiveness of secondary principals is not

related to their perceived ability to: act as a spokesman for teachers; let teachers know what is expected of them with regards to program balance; and, define his role as to his concern for his teachers as individuasls.

4. There is no interaction of creativity, perceptions of leadership behavior with respect to effectiveness. However, for prediction purposes concerning administrative effectiveness the secondary principal's perceived ability: to pull together his teachers; work with his superiors; represent his staff; maintain a closely knit organization; and resolve internal conflict emerge as important.

PREFACE

Then a ploughman said, Speak to us of Work.

And he (The Prophet) answered, saying:

You work that you may keep pace with the earth and the soul of the earth.

For to be idle is to become a stranger unto the seasons, and to step out of life's processions, that marches in majesty and proud submission to infinite.

... I say to you that when you work, you fulfill a part of earth's furthest dream assigned to you when the dream was born.

Gibran

This study is affectionately dedicated to my wife, Alfreda, whose patience, inspiration, tolerance, understanding, and encouragement caused the actualization of this dream...

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Finally, recognition is due the writer's daughter, Juenara Danielle, who at the age of three is too young to understand why daddy was never available to play, but who the writer hopes will grow to appreciate, and benefit from this achievement.

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CHAPTER I

INTRODUCTION

The position of principalship today is different and much more difficult than it was a decade ago. It is also a position of extreme importance and potential. For as the administrative leader of his building the secondary principal's effectiveness is evident in all that he administers. He must be able to work effectively with his community, his superiors, his staff, and his students. The effectiveness of his position is determined by the knowledge, skills, and creativity used in the administration of his school. The leadership challenges of this position, principalship, are unavoidable and must be met.

Why do some schools run more smoothly and efficiently than others? Why are some instructional programs more relevant, realistic, and rewarding? What type of administrative behaviors and activities are most influential in the development of an effective instructional program? There are numerous variables: faculty, financial support, salaries, student body, instructional aids, etc. However, it would appear that the most crucial variable is the principal himself -- how he organizes, delegates, and communicates; the skills he exhibits in human relations, technical, and conceptual skills; his goals and aspirations and how they are communicated to all who are concerned with the school; his total overall impact on the program of the school.

The increasing demand for rapid educational change and accountability has increased the need to develop strategies to implement changes with minimum disruptions. An investigation to identify and describe variables

related to effective instructional leadership behavior of school administrators, may add to the success of educational change.

Statement of the Problem

The broad purpose of this study was to contribute knowledge to the selection of school principals. Specifically, the purpose of the study was to examine the relationships among measures of the variables of creativity, effectiveness of secondary principals, and views of leader behavior to identify variables that can be used for the selection, placement, and evaluation of secondary principals.

This study investigated the relationships which may exist in leadership characteristics and effectiveness of principals in selected Maryland school districts. It was believed that the leadership patterns and characteristics of secondary principals are related to the quality of their program.[1] Furthermore, it was believed that measures of the effectiveness of a principal can be determined by those he must supervise -- classroom teachers.[2] This premise is based upon the widely held assumption that the principal is a major influence in setting the tone and climate, level of aspiration, level of interest, level of achievement, and organizational goals of his school by the patterns of leadership which he exhibits.[3] It is important to note that this study defined patterns and characteristics of leadership of principals in schools with varying degrees of effectiveness; consequently, identifying new criteria for selecting, placing and evaluating principals which can be used.

Research Questions

The primary research questions which guided this study are:

1. What is the relationship between creativity and perceptions of the

leader's behavior?

2. What is the relationship between creativity and effectiveness of principalship?
3. What is the relationship between perceptions of leadership behavior and effectiveness of principals?
4. What is the interaction effect of creativity and perceptions of leadership behavior upon effectiveness?

Research Hypotheses

More specifically the problem was to test the following hypotheses:

H_1: There is a positive relationship between creative ability and measures of perceived leadership behavior of secondary principals.

H_2: There is a positive relationship between creative ability and measures of effectiveness of secondary principals.

H_3: There is a positive relationship between scores secondary principals receive relative to their perceived leadership behavior and measures of their effectiveness.

H_4: There is a positive relationship between the interaction effect of the creative ability of secondary principals with measures of their perceived leadership ability and measures of their effectiveness.

Limitations of the Study

This study was limited in the following ways:

1. The study was restricted to secondary principals in Maryland making the data collected generalizable only to this and similar populations. The study reflected the perceptions of a specific sample who volunteered to become a part of the study.
2. The study was restricted to eliciting the perceptions of full time

classroom teachers only. It was assumed that measures of effectiveness of principals can be determined by the classroom teacher.

3. It was assumed that the perceptions expressed by the questionnaire respondents were reasonably valid indices of their true feelings. No attempt was made to ascertain reasons for the perceptions expressed by the respondents.
4. The study reflected the perceptions of a specific sample at a specific time and did not reflect possible changes over a period of time.
5. The study is restricted to the identified operational definitions of the variables utilized in the study.
6. Since the study was exploratory in nature, caution must be taken in regards to conclusions relative to cause and effect relationships.

DEFINITION OF MAJOR TERMS AND VARIABLES

1. LEADERSHIP BEHAVIOR - The totality of relationships that have been influenced by, and emanating from, a particular person who has been designated a leader.[4] Specifically, it is the interpersonal relationships which have been influenced and exercised in a school situation which have been directed through the communication processes toward the attainment of a specific goal or goals.
2. CREATIVITY - A behavior pattern which includes the following factors: sensitivity to problems, perception, fluency, novel ideas, flexibility of mind (ease at which one can change set), synthesizing ability, analyzing ability, reorganizational or redefinition ability, complexity or intricacy of conceptual structure of which one is capable, motivational factors, attitudes, and temperament.[5]
3. PRINCIPAL - The appointed leader of a school. A school is understood to include any combination of grades six (6) through twelve (12).
4. EFFECTIVENESS - Since a considerable amount of work has been done by Tom Maglaras in developing and validating a "Check List for the Evaluation of Secondary School Principals" (CLESP) in his dissertation, this instrument will be used to measure principals' effectiveness. The CLESP is an instrument designed to measure the degree of effectiveness of a principal using specific leadership characteristics[6] (See Appendix A).

CHAPTER II

REVIEW OF LITERATURE AND RELATED RESEARCH

This chapter presents a review of the related literature and has as its purposes the presentation of findings related to this study, and the establishment of a prospective from which this study should be viewed. Generally, this chapter will examine the origins of theories of leadership including the Great-Man, Times, Trait and Situation Theories. Specifically the focus of this chapter centers on research and related information regarding leadership theory; definitions; the trait, situation and behavior approaches to the study of leadership; and the role of the principal. The chapter is divided into the following subheadings

Classical Theories of Leadership

Leadership and Leadership Defined

Leader Behavior Description Questionnaire - LBDQ-XII

Creativity and Administration

CLASSICAL THEORIES OF LEADERSHIP

Introduction

Philosophers, sociologists, political theorists and many others have examined the diversity of leadership. The history of our existence has been molded by leadership or the lack of such action. Each of us are constantly placed in situations where we are either leaders or followers. While some of us are placed in the situation of leadership as the result of careful planning, others are placed through inheritance, and still others are placed by circumstance or coincidence.

One of the earliest discussions concerning leadership is based upon the writings of Plata, who, in Book VII of his Republic, detailed how a leader was to be selected and trained.[7] One of the first attempts at empirical research on leadership is credited to the French psychologist Alfred Binet.[8] The focus of Binet's research was school children divided into groups of leaders and followers. Although limited in value, Binet's research was a starting point for further research into the phenomenon of leadership.

Sigmund Freud was concerned with the efforts of the group, that is, the group is composed of individuals, each possessing his own biopsychic drive.[9] From Freud's point of view the group's behavior was directly related to the leader's behavior; consequently, the leader is the person around whom the group crystalizes.

Plato tended to view leadership as something above and beyond the structure of the group. Binet in his research sought to find in leaders a set of personality traits that would tend to be true under varying situations. One might, using Freud's theory, hypothesize that the behavior pattern of the leader depends upon his ability to sense the needs of the individual group members.

Leadership has always been a basic aspect of the communication structure of the American social order. In our inter-dependent society, which is greatly influenced by group relationships, press, television and radio, leadership becomes constantly more important and more complex.

History demonstrates that the leadership idea which dominates contemporary educational thought had its germination in the dawn of the American system, a time when imaginative and creative power influenced educational opportunity. It is unfortunate that most men who proposed great educational ideas were lost to posterity, since their personal identities dis-

integrated with their groups. However, some men who were heard and remembered are: Thomas Jefferson, Horace Mann, Henry Bernard, and Thomas Galloudet. Their leadership produced at least three guiding principles which can be claimed for our educational system: (1) maintenance of the political health of democracy, (2) opportunity for each child to reach self-fulfillment, and (3) maintenance and strengthening of religious and ethical values.

No doubt a major goal of leadership in the early days was the improvement of the literacy rate because of the importance for one to read and to interpret the Bible. Moreover, the need for an educated electorate also spurred the accomplishment of this end. Each individual would then have a right to attain self-fulfillment through the implementation of an educational system which proposes these values.[10] School administrators, moreover, did not have to possess or employ any skill beyond their authoritarian discipline and teaching competencies in order to maintain their positions.

Whether leadership is concerned with studies of small or large, formal or informal structured groups, certain elements are common to all situations. Two basic theories grew out of the thinking of the early political-philosophers. They are usually referred to as the "great-man" and the "times" theories.

Great-Man Theory

In general, the "great-man" theory has received the greater amount of attention and support in Western Society. The "great-man" theory holds that particular individuals are natively endowed with characteristics that caused them to always stand out from the many, and that permit them to guide and lead the majority.[11] This view grew out of and fits well

into the doctrine of the divine right of kings.

In its extreme form, this theory views social organization and social change as functions of foresight and action on the part of a select few. These select few, being natively endowed with qualities that make their leadership possible, have a responsibility to guide society and direct the behavior of many. This position is the general thesis which underlies Plato's Republic.[12]

Times Theory

Since the variables which support the "times" theory are relatively more difficult to identify, less attention has been given this view of leadership. The "times" theory views leadership as a function of a given social situation. That is, at a particular time, a group of people have certain needs and require the services of an individual to assist them in meeting their needs. Chance determines which individual will happen to be at the critical place at the critical time to provide the group with the needed leadership.[13]

This does not mean that this particular individual's peculiar qualities would thrust him into a position of leadership in any other situation. It means only that the unique needs of the group are met by the unique qualities of the individual.[14]

The rise of Hitler in Germany is often cited as an example of this view of leadership. "It has often been said that had Hitler espoused his philosophy in the United States rather than Germany, he should have been committed to a mental institution."[15]

The "times theory" is somewhat less rigid than the "great-man" theory, since it does assume a part of the "great-man" theory. It agrees that humans are not all alike; consequently that there are individual

differences, and that the unique characteristics of a given time meet the needs of a given group.

These two theories have provided the theoretical background for a great many studies in leadership and leader behavior. The "great-man" theory has led to numerous studies in various fields on the personal characteristics of traits of leadership. The "times" theory has provided the theory for what has commonly been referred to as the situation approach to the study of leadership.

One of the recurring problems in the study of leadership is that of achieving an objective portrait of how the leader behaves. This situation exists for a number of reasons. The study of leadership is extremely complex because a multiplicity of factors have an effect upon a leader's behavior. The factors have been studied by students from various disciplines which tended to emphasize different aspects of leader behavior. For the purpose of this review, the examination of two of the theories of leadership development will be discussed.

Trait Approach

Most of the traditional studies of leadership were focused on a search for the unique and universal traits of leaders. The common concept of leaders was that they were something apart from the mainstream of humanity. Leaders were thought to be possessors of inborn qualities that brought them to their positions of leadership. It was in this context that the "great-man" theory evolved.

Stogdill conducted a review of the literature pertaining to the personal factors associated with leadership. He pointed out that "in many of the studies surveyed, leadership was not defined. In others, the methods used in the investigation appeared to have little relationship

to the problem as stated."[16]

The general pattern of the trait approach to the study of leadership and leader behavior has been to identify the particular skills and aptitudes for a certain position and then to select an individual possessing these skills and aptitudes to fill the position.[17] In the study of leadership, this same approach has been followed many times.

A trait may be defined as a quality of mind, a characteristic feature, property, or distinguishing mark which differentiates one person from another.[18] Such qualities were first thought to be intrinsic, that is, they were inherent in the leader and in him alone. The trait approach then was an outgrowth of the "great-man" theory of leadership.

Some of the leadership traits which have been investigated are:

> ...age, height, weight, physique, energy, health, appearance, fluency of speech, intelligence, scholarship, knowledge, judgement and decision, insight, originality, adaptability, introversion-extroversion, dominance, initiative, persistence, ambition, integrity and conviction, self confidence, mood control, mood optimism, emotional control, social and economic status, social activity and mobility, bisocial activity, social skills, popularity, prestige and cooperation.[19]

Chester Barnard is considered by some to have fathered the modern era of organizational theory in 1938 with the publication of The Functions of the Executive, probably the most frequently cited book on studies of organization. In order of importance Barnard listed five fundamental qualities or characteristics of leaders.

1. Vitality and endurance, which he expressed as energy, alertness, spring, vigilance, and dynamic qualities.

2. Decisiveness, which he indicated was very difficult to precisely define.

3. Persuasiveness, which he defined as the ability of an individual to persuade and propensity to do so.

4. Responsibility, which were the emotional conditions that give an individual a sense of acute dissatisfaction because of failure to do what he is morally bound to do or not to do, in particular situations.

5. Intellectual capacity whatever that might be.[20]

Owens reported that, the concept of leadership, supported by years of philosophical speculation and research effort, generally holds that intelligence, imagination, perseverance, and emotional stability are among the many personal traits which characterize the individual qualified leadership.[21]

Yet, as a result of his research, definite conclusions were not reached. Findings were contradictory, though some leader superiority is usually found in various groups in intelligence, scholarship, dependability and responsibility; however nothing statistically significant has been found.[22]

Drake's study indicated the following to be important leadership traits: originality, aggressiveness, common sense, cheerfulness, humor, persistence, and desire to excel. On the other hand, he found the following traits or characteristics of non-leaders: anger, conceit, introversion, selfishness, puremindedness, quick osciliation, occasional extreme depression, and excitability.[23]

Bird, in reviewing leadership studies, found seventy-nine different traits listed. Most of the terms are vague and difficult to quantify and deal with objectively. Such objectives as "ambitious", "clever", "mature", "reliable", "stable", and "vigorous" were used.[24]

An excellent literature review study by Stogdill provides a

summation of leader traits studied up until 1948.[25] Stogdill concluded that there are five factors which seem consistently to be associated with leadership: "capacity, achievement, responsibility, participation, and status." These factors however are meaningless unless interpreted in light of the situation in which they are employed.

> A person does not become a leader by virtue of the possession of some combination of traits, but the pattern of personal characteristics of the leader must bear some relevant relationship to the characteristics, activities, and goals of the followers... It becomes clear that an adequate analysis of leadership involves not only a study of leaders, but also of situations.[26]

> The evidence suggests that leadership is a relation that exists between persons in a social situation, and that persons who are leaders in one situation may not necessarily be leaders in other situations.[27]

Tyler indicates attempts to single out leadership traits which have led to the following conclusions:

> The early work of psychologists sought to find the characteristic traits of the effective leader. The only trait which was found almost universally among leaders of business, education, politics, and the military was a higher than average level of energy. No traits of personality or of intellectual functioning were identified. Efforts to discover other traits which might be common to effective leaders in a single field were not successful.[28]

The results of these studies and reports have been noticeably conflicting and confusing with no consistent pattern of traits or characteristics emerging. Several criticisms have been leveled at the trait approach to the study of leadership. It has been pointed out by several authors, including Stogdill, that such studies have been unable to dis-

tinguish between traits necessary for leadership and those required to attain leadership positions.[29] Also, the studies have not been able to determine the relative importance of different traits; they have not proven various traits to be mutually exclusive; and they have produced contradictory evidence showing that leaders who possessed strikingly dissimilar traits have been equally successful.

Cooper and McGaugh[30] and Owens[31] feel this approach has not been successful. They state the reason for this relative lack of success lies partly in the fact that the criteria for judging effectiveness are many and relatively unstable. In addition, the requirements for being an effective leader in one situation are not necessarily the same for another situation.

Cooper and McGaugh listed two fundamental theoretical deficiencies in the trait approach to the study of leadership:

1. Studies indicate that no given trait or trait clusters invariably makes a person possessing it a leader.

2. Effective leadership varies from situation to situation; the traits which make for good leadership in one situation may be totally inadequate in another.[32]

Finally, Cooper and McGaugh conclude however:

> The trait approach is not to be discounted, though it does incorporate some serious limitations. On the one hand, particular traits and capacities do, without doubt, contribute to the success of an individual in operating as a leader. This does not mean, however, that these particular traits and capacities are the ones which make for 'good' leadership.[33]

Gordon L. Lippitt reported similar dissatisfaction with the trait approach to leadership when he reviewed 106 such studies and

found only five percent of the determined traits that appeared in four or more studies.[34] Perhaps the chief result drawn from this approach to research in leadership is the conclusion that the study of personal characteristics alone is only one aspect of leadership. Such traits do not act in isolation.

Scholars influenced and impressed by statements of Stogdill and Gibb about the conflicting results of the trait approach concluded that the study of traits alone would not explain leadership. Therefore, they set about the development of the situation approach to the study of leadership.

Situation Approach

The situation approach to leadership study is more concerned with the particular functions performed by leaders than any unique or universal traits. Somewhat less precise than the trait approach, the situation approach is more difficult to observe and quantify variables under consideration. The situation approach to the study of leadership holds that leadership is determined not by the characteristics of individuals but by the requirements of social situations and is based upon the "times" theory of leadership. One view of the situation approach holds that leaders in one situation may not be leaders in other situations where circumstances and social variables are different.[35] Most contemporary students of leadership adhered to the theoretical assumptions of the situation approach.[36] These students hypothesized that performance in a position of leadership is determined in a large part by the leader, the group, and the situation.

The early work of Kurt Lewin in his studying the phenomenon of groups laid the foundation upon which the Ohio State University leadership studied were started.[37] Methods of studying leadership centered upon the

study of leader behavior within the framework of the organization. One of the crucial aspects of the study of leadership was to establish a working definition of what it is. Under the assumption that each situation required leadership behavior unique to that particular position, studies were conducted to discover the significant leadership characteristics within various situations. Farron and Shearron report that this approach to the study of leadership did not prove very productive. When carried to its logical limits, the following chain of reasoning was revealed: "Leadership depends upon the situation; no two situations are ever alike; therefore leadership is never the same; thus no meaningful generalizations about leadership are possible."[38]

Another view of the situation approach to the study of leadership is based on the assumption that not all situations are unique, that certain commonalities may be found among situations.[39] Much of the theoretical research on leadership follows this approach. The advantages of studying leadership in terms of influence upon activities of the organization, rather than in terms of influence upon persons, are, according to Stogdill, as follows:

> 1. Leadership is removed from the broad vaguely defined realm of social interaction in general, and integrates it with the basic variables which describe an organizational group.
>
> 2. It suggests the development methods of studying leadership as an aspect of work performance, work methods and working relationships.[40]

It was with this foundation that the Ohio State University leadership studies embarked into the study of leadership. These studies identified two dimensions of leader behavior, "consideration" and "initiating structure", which depicted a leader's style. All leaders were seen

as having some combination of the two dimensions.[41] Getzels and Guba identified three distinct leadership styles from their model: (1) the nomothetic, (2) the ideographic and (3) the transactional. Getzel and Guba, contemporary theorists in administration, formulated a role-conflict model; consequently, educational administration was presented as a social system, illustrated in figure 1, with two interrelated dimensions: the nomothetic, or institutional, and the ideographic, or individual.

NOMOTHETIC

INSTITUTION - - - - - - - - - - ROLE - - - - ROLE EXPECTATION

SOCIAL SYSTEM OBSERVED BEHAVIOR

INDIVIDUAL - - - - - - - - PERSONALITY - - NEED DISPOSITION

The primary elements of the model were viewed as a system having a relationship of effectiveness, efficiency, and satisfaction. The educational administrator's role-conflict dilemma would be resolved if the individual needs and institutional goals were made to coincide.[42]

Finally, it is important to note that the situation approach did not attempt to devaluate the importance of individual traits; it simply insists that traits are important only as they relate to the particular group situation. In developing a comprehensive theory of leadership, some students of leadership hold that the nature of the situation is as important as are traits.

Stogdill noted the following in his review of trait approach studies:

> The evidence suggests that leadership is a relationship that exists between persons in a social situation, and that persons who are leaders in one situation may not necessarily be leaders in other situations. Must it then be assumed that leadership is entirely incidental, haphazard, and unpredictable? Not at all. The very studies which provide the strongest arguments for the situational nature of leadership also supply the strongest evidence indicating that leadership patterns as well as non-leadership patterns of behavior are persistent and relatively stable.[44]

Stogdill in effect predicted that, in order to study leadership more productively, we need to concentrate not on traits alone, and not on situations alone, but on leadership behavior. During the past two decades, the behavior approach to the study of leadership has been more noticeable than either the trait or situation approach.

However, as demonstrated by Yukl's development of Leader Situation Description Questionnaire (LSDQ) at Sacramento State College in 1968-1969, the situation approach to the study of leadership is far from dead.[45] Also, it noted that some studies are in reality a combination of situational and behavioral approach, as these studies attempt to determine leader behavior in a particular situation or position of leadership.

LEADERSHIP AND LEADERSHIP DEFINED

There is an increasing demand for educational reform today. Without increased sophistication in the management of change, Miles[46] predicted leaders are headed for a very difficult time in coming decades.

If one assumes that the school principal's leadership is of extreme importance in the instructional process at the building level, there is considerable need to investigate some of the factors in leadership behavior which are conducive to his success. A study to identify and describe these factors may assist in developing guidelines for training and placing administrators to facilitate successful educational programs.

Redl[47] defines leadership in terms of the polarization of the members of the group around some central person. Here, the person who is able to focus the behavior of the other members is considered to be the leader; however there are instances where this is not the case, for example, the drunk at a party. While Redl uses the central person approach to leadership, Jacobs defines leadership in terms of group goals. It can be said that the leader is the individual who is able to lead the group towards its goals.[48] Inherent in Jacob's definition of leadership is the assumption that the group does have goals and that the leadership role rotates among the members of the group.

Williams and Leavitt's work challenge Redl's definition of leadership in terms of sociometric choice, e.g., the person selected by the group as being the leader.[49] Wherry and Fryer[50] point out that the trouble with this method of leadership is that it only points out the leader, making it necessary to determine in each case the private judgements as to why the person was selected as the leader. Consequently, we may find that the selected person was in nothing more than a "popularity contest and thus there is no measure of leadership."

Cattell[51] has recently proposed a new way of looking at leadership. He argues that the first step in defining leadership is to try to define the parameters of group syntonically; that is to say, that we need to empirically determine the dimensions along which groups vary, these dimensions may include cohesiveness, synergy, morale, sociability, permeability, etc. Having determined these parameters, we can define the leader as the individual able to move the group along any of these dimensions. Cattell says:

> A leader is a person who has demonstrable influence upon group syntality. And we measure leadership by the magnitude of the synality change (from the mean) produced by that person, i.e., by the difference in syntality under his leadership and the syntality under the leadership of the average or moral leader.[52]

Such an approach to leadership is not so much theoretical as practical because many of the leadership norms are not available.

McCloskey describes leadership as:

> A process of stimulating and aiding groups to define common goals and to devise a voluntary means of moving toward them. Leadership is the structuring of voluntary group behavior. Leadership includes means of providing facts and ideas which help groups to define and reach objectives intelligently. Leadership involves making arrangements which facilitate constructive interaction between group members.[53]

Stout defined leadership as:

> Thus, what a leader has that others do not, appears to be a combination of innate and achieved attributes. Achieved attributes in turn appear to be a function of the characteristics of the group members, the dynamics of the group, and the group's task.[54]

Gouldner describes a leader as:

> Any individual whose behavior stimulates patterning of the behavior of some group. By emitting some stimuli he facilitates group action toward a goal or goals whether the stimuli are verbal written or gestual.[55]

Faroqui delimited leadership to interaction facilitation and goal progress.[56] Bowers and Seashore identified leadership using four categories, two of which were similar to those of Faroqui. They were the categories: supportiveness, interaction facilitation, goal emphasis, and work facilitation.[57] Etzioni as a spokesman for the structuralist-functionalist camp, defined a leader as:

> The power of an organization to control its members rests either in specific positions (department head), a person (a persuasive man), or a combination of both (a persuasive department head). Personal power is always normative power; it is based on the manipulation of symbols and it serves to generate commitment to the person who commands it. Positional power, on the other hand, may be normative, coercive, or utilitarian. An individual whose power is chiefly derived from his organization position is referred to as an <u>official</u>. An individual whose ability to control others is chiefly personal is referred to as an <u>informal leader</u>. One who commands both positional and personal power is a <u>formal leader</u>.[58]

Stogdill describes leadership as:

> The process (act) of influencing the activities of an organized group in its efforts toward goal setting and goal achievement. The definition of leadership relates it directly to the organized group and its goal. It appears that the minimal social conditions which permit leadership are the following: (1) a group of two or more persons, (2) a common task (or goal-oriented activities), (3) differentiation of responsi-

> bility (some of the members have different duties).[59]

Tead describes leadership as:

> The activity of influencing people to cooperate toward some goal which they come to find desirable.[60]

Bartlow describes a leader as:

> A person who becomes differentiated from other members in terms of the influence he exerts upon the goal setting and goal achievement activities of the organization.[61]

Pigors describes leadership as:

> A process of mutual stimulation which by successful interplay of relevant differences, controls human energy in the pursuit of a common cause.[62]

Crowley describes leadership (leader) as:

> An individual who is moving in a particular direction and who succeeds in including others to follow him.[63]

Gibb viewed leadership in relation to the individual.

> Leadership is not an attribute of personality, but a quality of his role within a specified social system. Viewed in relation to his group, leadership is a quality of its structure.[64]

Hemphill describes leadership as "The initiation of a new structure or procedure for accomplishing an organization's goals and objectives."[65] Halpin describes leadership as "A complex social phenomenon that cannot be treated meaningfully apart from related situational factors."[66] Halpin's definition, which complements Hemphill's suggests that, "In order to understand leadership in the sixties, one must not bypass the social, economic, and psychological behavioral and environmental forces that stimulate men to act either individually or in groups."[67] This statement in lieu of a forthright definition indicates the complexity of

the leadership phenomenon.

Griffiths[68] stated that the essence of leadership is innovation. However, there are other schools of thought as to what the term leadership really means. Another definition created by Lipham[69] distinguishes sharply between leadership and administration. He defined leadership as the initiation of a new structure or procedure for accomplishing an organization's goals and objectives or changing an organization's goals and objectives. The emphasis in this definition is on the "change agent" approach; for example, unless a new structure or procedure is established, leadership has not been exhibited. Administration, as used by Lipham, is an inactive process where the leader is not concerned with changing the organizational goals, structures, and procedures. Therefore, an administrator is viewed as a stablizing-agent rather than as a change-agent.

Todd[70] combined these factors and defined administration as the initiation, activation, management, and implementation of purposeful change. Katz and Kahn also agreed with Todd in their belief that there is no difference between leadership and administration. According to them, leadership consist of all acts of influence which affect matters of organizational relevance, with special emphasis on an increment of influence going beyond what formally accures to a role incumbent. Thus, a principal who merely implemented an established policy would not be regarded as exercising leadership. A principal who supplemented an existing policy or who interpreted it imaginatively would be exercising leadership.

Ovard[71] characterized the principal as the key person in effective and purposeful change at the building level. Gibbons[72] pointed to the high school principal as one with power and contacts to initiate

assessment and redirection of the school program. Shaplin and Olds[73] called the principal the greatest single factor in a successful team teaching program because of his leadership in providing direction and stimulation as needed, his selection of personnel, and his creative use of human and material resources. According to Miles[74] successful change is more likely to be achieved when initiated by the administrator because he is in a position to handle system problems in a supportive way within an ongoing system.

Carlson reported that innovation tends to prosper only when principals are aware and sympathetic to it.[75] Brickell expanded upon the idea by saying:

> The administrator may promote or prevent innovation. He cannot stand aside or be ignored. He is powerful not because he has a monopoly on imagination, creativity, or interest in change, but simply because he has the authority to precipitate a decision.[76]

The school principal's approach to the decision-making process depends upon the value judgements he makes with regard to participation in molding school policy and his skill in organizing this participation into the decision-making process.[77] Instructional changes which call for significant new ways of using professional talent, drawing upon instructional resources, allocating physical facilities, scheduling instructional time, or altering physical space depends almost exclusively upon the initiative of the administrator.[78]

Leadership Behavior

In recent years social scientists have been greatly concerned about the dimensions of leadership. Such preoccupations have been especially characteristic of the work in educational administration. Studies have shown that interpersonal staff relations are important to

change in school programs with the principal directly or indirectly influencing the process. When teachers are aware of the principal's support in purposeful change, they will utilize and exchange ideas and techniques with other teachers.[79]

It is assumed at the outset that one can learn something of the leadership of a school from the staff perceptions - and judgements drawn there from - of the principal. Generally, this holds true because perceptions of individuals are results of the combination of the individual factors of perceptions of the sender and receiver of the percept. Therefore, when descriptive statements are received based upon perceptions, information is obtained about the "describer" as well as the "described."

Halpin established that staff statements describing the "leader behaviors" of their principal are useful sources from which to draw inferences relative to the nature of leadership existing in the school.[80] This is true "because of" rather then in spite of the susceptibility of these descriptive statements to projective distortion. Stated otherwise, if it can be assumed that leadership as distinct from leader behavior is a transaction rather than a behavior, then the nature of leadership at a school will be revealed in the quality of transactions between the behavior of the leader and the perceptions thereof by the led.

Establishing the point also affirms the usefulness of the "description questionnaire" form of research tool in the systematic study of the phenomena called "leadership." The projective contamination of interpersonal perceptions will generate staff responses that are amenable to generalizing with respect to "leadership" when leadership is seen transactionally as a state of the total group.[81]

Halpin[82] used a "descriptive" questionnaire to pursue two

specific factors in his study of school superintendents. If one assumed that the leadership behavior of a superintendent in a school system is reasonably similar to a principal's leadership behavior in his building, then a review of Halpin's findings are in order. Two dimensions of leadership, initiating structure and consideration, were used to describe leader behavior. Initiating structure referred to the leader's behavior in delineating the relationships between himself and members of his work group, and endeavoring to establish well-defined patterns of organization, channels of communication, and methods of procedure. Consideration referred to behavior indicative of friendship, mutual trust, respect, and warmth in the relationship between the leader and the members of his staff. Although teachers appreciate a principal who takes the initiative within the organization, they still want him to carry out his actions in a friendly, supportive manner.

Some writers have suggested that it would be very difficult for an administrator to score highly on both initiating structure and consideration. However, research has shown that a leader can apparently score well in both categories.[83] Halpin concluded from his study of the observed behavior of school superintendents that:

> The correlation between the two dimensions -- consideration and initiating structure -- shows that an effective leader can initiate structure without sacrificing consideration. Yet we repeatedly encounter superintendents who fear to take a stand, who hesitate to initiate structure, lest they be accused of being anti-democratic. This is nonsense, for the superintendents who adopt this attitude lose their respect of their staffs; teachers can quickly spot the phony who tries to hide his own ineptness in the soggy oatmeal of a pseudo group process.[84]

Evenson studied the leader behavior of forty principals and stated,

> ... Earlier research with the Leadership Behavior Description Questionnaire has shown that the behaviors reflected by the two leadership dimensions are not incompatible; this finding is confirmed at two points in the present study: (1) For each respondent group taken seperately, the correlation between the real scores on Consideration and Initiating Structure is positive and statistically significant in each instance. Apparently, principals do not view these behaviors as incompatible when they are not branded with prevailing terms; superintendents and teachers join the principal in this respect. (2) Some principals are described by their superintendent and staff members as scoring high on both dimensions -- it can be done.[85]

The two factorially defined subscales, Consideration and Initiation of Structure have been widely used in empirical research, particularly in military organizations, industry and education. However, Shautle refused to accept the position that these two factors were sufficient to account for all observable variance in leader behavior and noted that there was no leadership theory available to suggest additional factors.[86] A new theory of role differentiation and group achievement by Stogdill, and the survey of a large body of research data that supported that theory, suggested that a number of variables operate in the differentiation of roles in social groups. Possible variables suggested by some theorist are the following: tolerance of uncertainty, persuasiveness, tolerance of member freedom of action, predictive accuracy, integration of the group, reconciliation of conflicting demands, representation of group interests, role assumption, production emphasis, and orientation toward superior.[87]

Additionally, Stogdill developed hypothesized subscales to

measure these variables.[88] Questionnaires incorporating the new items were administered to various groups, revised, and reanalyzed. The Leader Behavior Description Questionnaire - Form XII, that will be used in this study, represents the fourth revision of the questionnaire. The description of leader behavior and the evaluation of leader behavior will not be identical processes for this study. The Leader Behavior Description Questionnaire (LBDQ) has been designed to measure leader behavior objectively in terms of its frequency of occurence in two areas: initiating structure and consideration. However, the LBDQ - Form 12 will be used because it provides information on 12 subscales and accounts for a larger portion of the variance than does the LBDQ. The following variables will be measured: Representation, Demand Reconciliation, Tolerance of Uncertainty, Persuasiveness, Initiation of Structure, Tolerance of Freedom, Role Assumption, Consideration, Production Emphasis, Predictive Accuracy, Integration, and Superior Orientation (See Appendix B).

LEADER BEHAVIOR DESCRIPTION QUESTIONNAIRE (LBDQ - XII)

Behavioral Approach

Results of individual studies examining both traits and situations can be viewed as either discouraging or encouraging depending on one's interpretation and viewpoint. However, the broad overview pinpoints their weaknesses as the basis for leadership theory. While leaders may exhibit traits and may respond to situations that are associated with variations in their leadership, the commonalty among significant traits and situations is lost when a variety of organizations are considered.[89]

In the late 1950's and early 1960's, the shift towards a behavioral oriented approach to the study of leadership became evident with research focusing on behavioral definitions of leadership. This approach defined educational leadership as "that action or behavior among individuals or groups which causes both the individual and the group to move toward educational goals that are increasingly mutually acceptable to them."[90]

This definition of leadership was reflected earlier in the history of the study of leadership and organizational behavior by Bernard's criteria of effectiveness and efficiency: An organization is effective if its common purposes are being achieved; it is efficient if cooperation among individuals exists and their motives are satisfied.[91]

Jennings maintained leadership to be a manner of interacting with others and characterized not so much by any trait or combination of traits, as by the interpersonal contribution of which the individual becomes capable in a specific setting which elictis such a contribution from him. Leadership and its characteristics might therefore be defined in terms of actions -- what a leader does or does not do in a particular situation.[92]

A significant step in behavior oriented research was made by the Personnel Research Board at Ohio State University under the leadership of Hemphill, Coons, Shautle, Halpin and Stogdill when they reformulated the object of study into leader behavior rather than leadership. Leader behavior was considered more subject to observation and analysis than traits or situations.

Halpin stated in 1956:

> We sill greatly increase our understanding of leadership phenomena if we abandon the notion of 'leadership' as a trait and concentrate instead upon an analysis of behavior of leaders.[93]

This focus upon leadership behavior, rather than upon "leadership" was an outstanding characteristic of the research approach used in the Ohio State Leadership Studies.[94] This together with careful differentiation between the description and evaluation of the leader's behavior, was prominent in the behavioral approach.

Leader Behavior Description Questionnaire

According to Hemphill and Coons, the Personnel Research Board of Ohio State University was responsible for initiating the project which led to the development of the Leader Behavior Description Questionnaire (LBDQ). That "Board" had a "... program of research in the field of 'Leadership in a Democracy'."[95]

Shautle reports that in 1945, when this work was initiated there was "no satisfactory theory or definition of leadership ... available ... The trait approach had reached an impasse before the beginning of World War II ..." which, according to Shautle, encouraged the study group to adapt a new approach to the topic of leadership, i.e., "... examining and measuring peformance or behavior ..." in preference to the earlier trait approach.[96]

However, a particular difficulty confronted the study group; it was that "... the study of leadership may be viewed as that of observing the behavior of individuals ... who have been designated 'leaders' ...," and Hemphill and Coons report that this can be approached from asking two conceptually different but related questions. They are:

1. What does an individual do while he operates as a leader, and
2. How does he go about what he does?[97]

It was decided early by the staff, composed of psychologists, sociologists, and economists, to make the development of a leader description instrument oriented toward "how he does it" (i.e., behavior provides a description of what a leader does) a common task of the combined disciplines represented. It was also agreed that the instrument should be adaptable to studies in widely different frames of sequence to thereby permit and encourage integration.

As a result of this approach the Personnel Research Team at Ohio State developed the Leader Behavior Description Questionnaire (LBDQ). From the work of the personnel board, the dimensions of "initiating structure and consideration" have emerged as two significant concepts for describing leader behavior. Halpin describes the two dimensions as follows:

> 1. Initiating structure refers to the leader's behavior in delineating the relationship between himself and members of his work group, and in endeavoring to establish well defined patterns of organization, channels of communication, and methods of procedure.
>
> 2. Consideration refers to behavior indicative of friendship, mutual trust, respect, and warmth in the relationship between the leader and the members of his staff.[98]

The first edition of the LBDQ contained these two dimensions of leader behavior only. After the initial development of the LBDQ, it was used by Halpin to study the leader behavior and effectiveness of aircraft commanders. Three hypotheses were set forth in this study:

> Specifically, we would expect squadron and wing superiors to rate favorably the performance of those commanders who show high Initiating Structure Behavior...
>
> This leads to the second hypothesis to be tested: that crews will prefer, as aircraft commanders, those leaders who are high in consideration behavior...
>
> From this we postulate our third hypothesis -- that commanders who are rated highest by their superiors on "Overall Effectiveness in Combat" are those who score above the mean on both leader dimensions, and that the commanders who are rated lowest by their superiors on this same criterion are those who score below the mean on both dimensions.[99]

From his work with the LBDQ, Halpin developed a quadrant scheme for describing leaders' behavior (Figure 2). In Quadrant I are placed those who score above the mean on both Consideration and Initiating Structure. Those in Quadrant III scored well below the mean in both Consideration and Initiating Structure. Quadrant II contained those who were above the mean on Consideration, but below the mean on Initiating Structure; while those in Quadrant IV are below the mean on Consideration, but above the mean on Initiating Structure.[100]

Figure 2

IV C- S+	I C+ S+
III C- S-	II C+ S-

Halpin's description of the leaders that fit into each quadrant is as follows:

> The leaders described in Quadrant I are evaluated as highly effective, whereas those in Quadrant III, whose behavior is ordinarily accomplished by group chaos, are characterized as most ineffectual. The leaders in Quadrant IV are the martinet and the "cold fish" so intent upon getting a job done that they forget they are dealing with human beings, not with cogs in a machine. The individuals described in Quadrant II are also ineffective leaders. They may ooze with the milk of human kindness, but this contributes little to effective performance unless their consideration is accomplished by a necessary minimum of Initiating Structure.[101]

Originally, these two dimensions (including the four quadrants) of leader behavior were identified in a study of aircraft commanders. Subsequent research however, has also shown this application to business, political and educational leaders.[102]

Halpin's study of aircraft commanders showed that the most "effective" commanders are those who score high on both consideration and initiating structure.[103] Similarly, Hemphill's study of twenty-two departments in a liberal arts college showed that the departments with the best campus reputation for being well-administered were those whose chairman scored above average on both leader behavior dimensions.

An examination of these two dimensions was done by Keeler and

Andrews and it was discovered that high scores of principals' leader behavior was related to the productivity of the school, as measured in terms of student achievement.[105] Miklos concluded that high scores on structure and consideration dimensions were associated significantly with a high degree of teacher-principal on expectations for the role of principal.[106]

Additional study was conducted by McBeath and Andrews who used the LBDQ with fifty-nine teachers whose behavior was described by themselves, by fifty fellow teachers, by 571 students, by twelve principals, and by twelve superintendents. Teachers who were above average on the initiating structure and considerations indicies were rated as effective teachers as concluded by the results.[107]

All researchers did not use the LBDQ to support the premise advocated by Halpin, that is, many researchers attacked the validity of the instrument due to the range of correlations that have been reported between Initiating Structure and Consideration scores. Additionally researchers questioned the halo effect due to the nature of the instrument, as well as differences in leadership style. Consequently, Seeman developed another instrument to measure communication, separation, change, and domination. Although Stogdill and Coons investigated other variables besides those of the LBDQ, only two; a measure of ambivalance, and a measure of generalized attitude about status held by the individual were found to be significant statistically correlated to the halo effect.[108] Based upon information received from the seventy-two teachers and nine superintendents who composed the sample used by Seeman to correlate the two dimensions of the LBDQ and other variables it was concluded that there is no need to "worry at this point" about the halo effect.[109]

Some doubt about the validity of the LBDQ was expressed by Charters

also. Hunter, one of Charter's doctoral candidates, had found an unexpected empirical difference in his study. Charters noted:

> To his surprise, Hunter observed that teachers and board members in large school systems rated their superintendents lower on both dimensions of leadership than teachers and board members in small systems. Just the reverse occurred in the superintendents' self ratings: superintendents in large systems described themselves as higher in both Initiating Structure and Consideration than those in small systems.[110]

Charters conducted a replication study to determine whether the finding was accidental. In his replication study Charters could not duplicate Hunter's finding and concluded that the occurrence was accidental.[111]

During the early development of the LBDO, Halpin and Winer also noted the lack of complete independence between the two dimensions. With respect to this lack of independence they reported the following:

> Although the factor analysis showed Consideration and Structure to be orthogonal factors, uncorrelated scores could not be obtained since few items were factorially pure. Some individuals exhibit both forms of behavior.[112]

Perhaps complete independence should not be expected since some individuals do exhibit both forms of the behavior measured by the instrument.[113]

Fortunately, researchers came to realize that there is nothing novel about the two dimensions (initiating structure and consideration) which accounted for approximately eighty-four percent of the common variance of the observed leader behavior, when they pointed out the close parallel between them and the two objectives of group maintenance. They did, however, establish the value of the empirical research that permits one to measure the leader behavior of an individual and show how this behavior is perceived by members of the immediate work group. This empirical approach allows one to determine by objective and reliable means

how specific leaders vary in leadership behavior. Another strength of this approach is that the observation of behavior occurs in the actual group situation and not in some hypothetical, experimental setting.

Realizing the inability of the LBDQ to account for all the observed variance in leader behavior Stogdill, Goode, and Day started in 1963 examining other hypothesized subscales.[114] However, it was Stogdill in 1963, at Ohio State University, Bureau of Business Research who finalized and published Leader Behavior Description Questionnaire - Form XII (LBDQ - XII).[115] Brown summarizes the uses of the LBDQ - XII as follows:

> Users of the LBDQ - XII ... assume how the leader really behaves is less important than how the teacher perceives that he behaves; it is their perception of his behavior -- if anything -- that influences their own actions and thus determines what we call leadership.[116]

Stogdill has defined leadership as a process which influences the activities of an organization in the task of goal setting.[117] His instrument, the LBDQ - XII, measures leader behavior. A high score on each of the sub-items would tend to indicate strong perceived leadership behavior along that particular dimension. Therefore, it follows that a higher score would suggest the leader's greater influence in setting goals.[118] The goals of the schools of the future will be predicated upon societal pressures, according to Lonsdale.[119]

The LBDQ - Form XII was selected for use with this present study because it provided a method of measuring principals' leadership behavior. Teacher statements describing the leadership behavior of their principal are excellent sources from which to draw inferences relative to the nature of the leadership which exists in the school. The nature of leader-

ship in any school will be revealed in the transaction between the behavior of the leader and the perceptions of those whom he leads. Fietler, Evenson, and Golt's research in school organizations showed that there is a significant relationship between organizational processes and the leader behavior of the principal.[120] Teachers' perceptions, as measured by the LBDQ-XII, should provide a good indication of the role of principals in the individualization process. Bloom held that the judgements, made by persons who are in a position to observe an individual over a time, represent one technique for quantifying characteristics.[121] The judgements in the form of ratings, he stated are "especially useful when applied to a specific characteristic observed directly" ... such ratings are likely to be useful when depicting those characteristics which are reflected in overt behavior and in interpersonal relations.[122]

CREATIVITY AND ADMINISTRATION

Research concerning creativity exist as "random, unrelated insights or as outright disagreements and contradictions" prior to 1950.[123] Additionally, there is great lack of literature relating to the relationship between creativity and leader behavior. Therefore, this subsection examines definitions of creativity and its relationship to the area of Educational Administration.

Definitions of Creativity

From one of the few studies that deal with creativity and educational administration, the following conclusions were reached by Antley:

> 1. Administrators who score high on creative ability also demonstrate that they have a good store of factual knowledge of school administration by scoring well on the job - knowledge measured, that is, the National Teacher Examination: Administration and Supervision.
>
> 2. The creative administrators generally tend to operate at a higher level of decision making. They deal more in schoolwide problems rather than the isolated problem or one that affects only one attendance center in their school system.
>
> 3. Creative administrators can offer more possible solutions to their problems.
>
> 4. Administrators who score higher on creative ability tend to involve more persons in their decision making.[124]

Taylor and Holland have stated:

> One of the greatest potential strengths of our nation lies in fostering creativity in all areas of our culture. Creative thinking is needed in many fields besides the arts and sciences: administration and leadership, political science and international diplomacy, accounting, health

> research and practice ... In principle, creative performance can occur in any area of human endeavor.[125]

Shane and Yauch devoted an entire book to a discussion of "creative administration" and "creative leadership" as related to leadership functions of school administrators.[126] Fortunately they defined educational leadership as the "guidance of the cooperative process of using individual and group power and community in order to develop socially desirable experience for children and youth."[127] Unfortunately, they discussed the need for creative leadership, but nowhere did there appear any evidence supportive of these statements. Sachs also has the same problem, that is, while he did state that "the administrator develops his role to its highest level if he learns to use the group's creative ideas and to set them in a realistic framework", he did not address leader behavior or leadership directly.[128] Sachs further states that "the administrator who can integrate the creative ideas of others becomes creative himself."[129]

The difficulty in defining creativity is separating "creativity", as such from the "creative process" or the totality of the "creative personality."[130] Yet, many attempts have been made by philosophers, engineers, businessmen, psychologists, and scientists. One such attempt was made by Stein who defined creativity in terms of a product, that is, the creative work is a novel work that is accepted as tenable or useful or satisfying by a significant group of others at some point of time."[131] Stein continues by stating:

> The creative product did not exist previously in precisely the same form. It stems from a reinterpretation of already existing materials or knowledge, but when it is completed, it contains elements that are new.[132]

Steins ends by stating:

> While novelty is a critical feature of creativity, if we attend solely to it we overlook the fact that creativity is not a single act but a process. Creativity results from both intra-personal and inter-personal processes.[133]

Rogers also continues to define creativity as a process when he states

> " ... the emergence in action of a novel relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people or circumstances of his life on the other."[134]

Fromm and Maslow define creativity in terms of personality traits. Hallman calls attention to this approach when he sites

> ... capacity to be puzzled, ability to concentrate, capacity to accept conflict, and willingness to be reborn every day. Rogers has a similar list: openness to experience, internal locus of evaluation, and ability to toy with the elements. Maslow has perhaps the most extensive list; the creative personality, he says, is spontaneous, expressive, effortless, innocent, unfrightened by the unknown or the ambiguous, able to accept tentativeness and uncertainty, able to tolerate bipolarity, able to integrate opposites. The creative person is the healthy, self-cactualizing person, Maslow believes.[135]

Steinberg suggests that there are external (cultural) determinants as well as internal determinants of creativity. Specifically, Steinberg suggests:

> Society encourages creativity to the extent that its value system includes a positive regard for change and novelty. It discourages creativity to the extent that social pressures for conformity are so intense that deviations are punished directly or

> indirectly through social ostracism. He also observes that a cultural awareness fosters creativity to the extent that it encourages openness to internal and to external experience.[136]

McKinnon sets forth three conditions that must be met for the identification and development of true creativity:

> It involves a response that is novel or at least statistically infrequent. But novelty or originality of behavior while a necessary part of creativity is not sufficient. If a response is to lay claim to being a part of the creative process, it must to some extent be adaptive to reality. It must serve to solve a problem, fit a situation, or in some sense correlate with reality. And thirdly, true creativity involves a sustaining of the original insight, an evaluation of it, and elaboration, a sustaining and developing of it to the fullest.
>
> What I am suggesting is that creativity is a process which has a time dimension, and which involves originality, adaptiveness, and realization.[137]

Another way of defining creativity is in terms done by Guilford who states "in its narrow sense, creativity refers to the abilities that are most characteristic of creative people."[138] Referring to these abilities Guilford states:

> There are five classes of abilities depending upon the basic kind of operation or activity involves. A group of cognitive abilities has to do with discovery or recognition of information. They are ways of understanding or comprehensions. A parallel group has to do with retention of information. Two parallel groups are concerned with productive thinking. Given certain information, we not only understand it but we can generate from it some new information. An important new distinction is that between divergent production and convergent production. In divergent production the

> goal is to produce a variety of ideas, all of which are logically possible in view of the given information. In convergent production the conclusion is completely determined by the given information, or at least there is a recognized best or conventional conclusion. A fifth group has to do with evaluation, which means critical thinking. We continually evaluate what we know, what we recall and what we produce by way of conclusions.[139]

Guilford further examines the concept of creativity by developing a three dimensional model of human intellect.

> One dimension represented the operations performed: cognition, memory, divergent thinking, convergent thinking, and evaluation. A second dimension represented the different types of content to which operations may be applied: figural, symbolic, semantic and behavioral. The third dimension was that of products: units, classes, relations, systems, transformations, and implications.[140]

Using Guilford's approach to creativity would indicate that creativity is the ability to generate a large number of ideas, products, or solutions; select the most appropriate and make an evaluation.

The literature would suggest that creativity is not a unitary construct. Certain aspects of creativity may function in certain situations but not in others. Similarly certain combinations of creative abilities may be important in a particular situation while they might have quite different functions in the next situations. In the present study, "creativity" is "a behavior pattern which includes the following factors: sensitivity to problems, perception, fluency, novel ideas, flexibility of mind (ease at which one change set), synthesizing ability, analyzing ability, reorganizational or redefinition ability, complexity or intricacy of conceptual structure of which one is capable, motivational factors, attitudes, and temperament."[141]

The Creative Principal

One of the characteristics of human behavior which our society appears to deem highly desirable is that of creativity. All around us - in the classroom and at work - we are rewarded for our creative ability. Sound research over the past two decades has answered many of the thorny problems relative to the construction and development of instruments that set out to measure creative behavior. Yet, little if any research has been done in the field of educational administration. Certainly, as the administrator assumes his leadership role, he must become involved in the creative process. He is responsible for fostering creativity in his organization, providing creative teaching, and insuring that pupil personnel have the opportunity to develop creative ability.

Lippitt and colleagues[142] identified facilitating forces of changes when the principal: creates a staff atmosphere of sharing and experimentation; projects openness to adaptation and modification practices; and portrays optimism. A strong appeal is made by Alexander[143] that creative and imaginative leadership is most essential in instructional program improvement. Administrators in schools must be people who are progressive and innovative.

The principal who is aware of his creativity may encourge his teachers and students to be creative. Andrew states that:

> The link between creativity and education is paramount. The educator must find an applicable philosophy in the relationship between creativity, the individual, nature, and education. For our purpose it seems imperative that we adopt a course of action which depends on a concept of man: his nature, his power, and reasons for existing.[144]

Robin Farquar states:

> Successful organizational leadership is a creative act in that the administrator must take a myriad of variables, intricately inter-related, and from them fashion some kind of meaningful pattern, structure, form or sequence. He must understand how one element of his 'creation' derives inevitably from another and irrevocably determines a third. He must be aware of natural sequences, and he must recognize critical points or structual climaxes. He must know where the imposition of his will may have an effect and where the result of a sequence is predetermined. All of these capabilities, it is noted, are characteristic of the successful artist as well as the successful administrator.[145]

Generally,

> The creative individual needs to recognize and esteem his own creativity; he needs to learn how to guard it from exploitation and abuse; he needs to know how to accept inevitable limitations in the environment while yet holding to his purposes and searching for opportunities for the expression of his talent. He needs to learn how to cope with hardships and with failure, with anxieties and fears, and to avoid isolation and retreat; he, perhaps, needs to learn not to be more obnoxious than necessary.[146]

Finally, it should be noted that the "administrator finds that his work consists of primarily removing obstacles such as 'red tape', of creating opportunities where the teachers and students and administrators (including himself) can freely use a climate in which each person can believe that his potential is valued, his capacity for responsibility is trusted, his creative abilities praised."[147]

SUMMARY

The study of leadership is as old as the study of history. Leadership has been examined down through the years beginning with Plato; however, it has been during the last fifty years that leadership has received its greatest attention. It is just recently that social scientists and behavioral scientists have developed an interest in the many dimensions of leadership.

Philosophers, sociologists, political theorists, and many others have examined the diversity of leadership. Each approaching and describing leadership in several ways, reflecting differently upon the quality or position. Leadership has been examined in terms of the "great-man" and the "times" theories which gave use to the "trait" and "situational" approach to leadership study. Generally it can be observed that these approaches lead indirectly to the behavior approach.

Generally, the number of definitions concerning leadership are as many and varied as those who have studied leadership. Some define leadership in terms of the group's performance, others in terms of the individual. Another group defines leadership in terms of the task to be performed; however, for this presentation leadership is examined in terms of leadership behavior.

The leadership behavior approach to the study of leadership provides information about the "describer" as well as the "described". Staff statements describing the leadership behaviors of their principal are useful sources from which to draw inferences relative to the nature of leadership existing in the school. The establishment of this point also affirms the usefulness of the "description questionnaire" as a research tool in the study of leadership.

The role of the school principal has changed dramatically during the past half century. The principal is in a very strategic position as a link between the central office and his staff. The principal must remember that he has a dual responsibility - to his teachers for their satisfaction and well-being, and also to the school district for the accomplishment of certain goals and objectives. The secondary school principal as the designated leader in his school may utilize different styles of leadership, but the successful principal adapts his leadership style to the existing situation. Studies indicate that a principal who is creative usually has a creative staff.

Research concerning creativity exist as random, unrelated insights or as outright disagreements and contradictions prior to 1950. Additionally there is a great lack of literature between creativity and leadership.

Generally, there are as many definitions of creativity as were found for leadership. The approach used to handle creativity for this presentation has been espoused by Guilford, i.e., creativity is a behavior pattern which includes the following factors: sensitivity to problems, perception, fluency, novel ideas, flexibility of mind (ease at which one changes set), synthesizing ability, analyzing ability, reorganizational or redefinition ability, complexity or intricacy of conceptual structure of which one is capable of motivational factors, attitudes, and temperament.

Finally, the composite secondary principal, as described in the literature and research reports, is a veritable superman with skills, abilities, and perceptions in several operational areas. Various groups look to him for leadership, but these groups sometimes hold opposite and conflicting expectations. Required is a skilled and well trained prin-

cipal to effectively mediate these conflicts. Hopefully, this study will isolate those skills that are the most crucial to successful secondary school administration. Through relevant training programs, careful selection and appointment policies, and continued in-service growth, the secondary school principalship can be upgraded so that the influence which should be wielded from this position on behalf of quality education will not be questioned because of imperceptive and ineffective individuals.

CHAPTER III

METHODOLOGY

This chapter is concerned with the methodology used in the course of the study. The following will be discussed: (1) restatement of problem (2) sampling (3) procedures (4) description of the instruments used in the study and (5) analysis of data.

Restatement of Problem

The broad purpose of this study was to contribute knowledge to the selection of school principals. Specifically, the primary purpose of the study was to examine the relationships among measures of the variables of creativity, effectiveness of secondary principals, and views of leader (principal) behavior within the secondary schools in identified school districts of Maryland, for the establishment of new criteria for selecting, placing, and evaluating principals.

Primary questions which guided the study were:

1. What is the relationship between creativity and perceptions of leadership behavior?

2. What is the relationship between creativity and effectiveness of principals?

3. What is the relationship between perceptions of leader behavior and effectiveness of principals (includes the nine subscales of the CLESP with the twelve subscales of the LBDQ-XII)?

4. What is the interaction effect of creativity and perceptions of leadership behavior upon effectiveness?

Secondary questions which guided the study were:

1a. What is the relationship between creativity and representation?

b. What is the relationship between creativity and demand reconciliation?

c. What is the relationship between creativity and tolerance of uncertainty?

d. What is the relationship between creativity and persuasiveness?

e. What is the relationship between creativity and initiation of structure?

f. What is the relationship between creativity and tolerance of freedom?

g. What is the relationship between creativity and role assumption?

h. What is the relationship between creativity and consideration?

i. What is the relationship between creativity and production emphasis?

j. What is the relationship between creativity and predictive accuracy?

k. What is the relationship between creativity and integration?

1. What is the relationship between creativity and superior orientation?

2a. What is the relationship between creativity and the "role of supervisor?

b. What is the relationship between creativity and "curriculum development?"

c. What is the relationship between creativity and the establishment of "communication" channels?

d. What is the relationship between creativity and "technical (administrative) skills?"

e. What is the relationship between creativity and "decision making procedures?

f. What is the relationship between creativity and "human relations" activities?

g. What is the relationship between creativity and "conceptual skills?"

h. What is the relationship between creativity and performance as a "professional educator?"

i. What is the relationship between creativity and the "principal as a person?"

Sample

The nature of this study necessitated the participation and collaboration of both principals and teachers. The participants of this study functioned in fifty secondary schools within Maryland. Generally, the participating principals had these characteristics:

1. Full-time teaching staff of between 35 and 160 persons, who report directly to the principal.

2. A secondary principal in charge of any combination of grades 6 - 12.

3. A secondary principal in charge of one and only one building with no teaching periods.

Additional conditions necessary for the study:

1. The secondary principals allowed the study to be conducted within their buildings.

2. The chief school administrator agreed to allow the study to be conducted in their school system.

The schools included within this study were from the following Maryland School Districts: Baltimore, Anne Arundel, Baltimore City, Garrett, Howard, Allegany, Charles, Cecil, Caroline, Calvert, Dorchester, Harford, Carroll, and Frederick. These school districts were selected for investigation because it was assumed that the teacher and principal sample would provide, within limitations, a representative group.

Procedure

Generally, letters were sent to all principals within the identified districts requesting their participation and cooperation in the study (Appendix C). Enclosed with this letter was a brief description of the study (Appendix C) and a self-addressed stamped postcard for their reply. A total of 245 schools were contacted with 65 agreeing to participate in the study, of which, the majority were from a single urban district.

The exception to this procedure was with the Baltimore City School district. In this district both informal and formal requests (phone calls and letters) were made to the Deputy Superintendent of Planning, Research and Evaluation for Baltimore City's participation in the study (Appendix D). After granting permission for the study to be conducted, a memorandum was sent to each secondary school by the Deputy Superintendent suggesting that secondary schools participate in the study (Appendix E). The memorandum was followed-up by phone calls from the researcher. A total of fifty-two (52) secondary schools were called with forty-six (46) agreeing to participate in the study.

After permission was granted for the study to be conducted within a school, all principals were mailed packets of materials for each teacher (included directions, testing instruments, and return envelopes), test of creativity taken by the principal, and a large envelope for returning the information to the researcher (Appendix F). Also, at this time principals were reminded of the researcher's promise of anonymity since on the front of the instruments there appeared a numerical code that was used only for data processing (Appendix G).

In reference to the AC Test of Creative Ability (Appendix H) prin-

cipals were instructed to follow explicitly the directions outlined on the front of the booklet. Also, they were requested to note the amount of time it took for them to complete each section and the number of years that they had been principal of their building. The completed test of creativity, as well as the other teacher materials, were all returned to the researcher by mail.

Upon completion of the study, each principal participating was sent a written thank you and summary of the results of the study. As prearranged and agreed, in order to insure and protect the confidentiality and anonymity of teachers' responses, results of individual schools were not provided or identified.

Instruments

Three data-gathering instruments were used in this study: The AC Test of Creative Ability, the Check List for the Evaluation of Secondary Principals (CLESP), and the Leader Behavior Description Questionnaire - XII (LBDQ -XII). Each of these instruments will be briefly described.

The AC Test of Creative Ability (Appendix H). The test was developed in the AC Spark Plug Division of the General Motors Corporation by Richard H. Harris and A. L. Simberg. The test is designed to give a measure of the quantity and uniqueness of the ideas an individual can produce in a given situation.

Generally, the AC Test of Creative Ability can be described as a paper-and-pencil test which can be administered to individuals or to groups. Two parallel forms of the test were developed and each consists of five parts; however, it is recommended by the publisher that routine use be restricted to Parts I, II, and V of the test.

> Part I - A twenty-minute test containing five possible situations. The subject list as many possible consequences of each situation as he can. This part yields both a quantity and a uniqueness score.
>
> Part II - A ten-minute test of general reasoning ability containing five unusual and not necessarily true statements. The subject lists as many reasons as possible to explain the truth of the statements. This part also yields a quantity and a uniqueness score.
>
> Part V - A fifteen-minute test of originality, containing a list of five common objects. The subject gives as many possible uses as he can think of for each object.

According to the creators of this test very little loss of significant information occurs when only Parts I, II, and V are used because the correlations between the Quantity and Uniqueness scores from the same part of the test are all high, for example, +.8 or over.[148] Additionally, the publisher reports that the average correlation between the Quantity and Uniqueness scores from the same part of the test is .849 and is significantly greater at the .01 level than the average correlation between either the Uniqueness or the Quantity scores from different parts of the test.

The development of the AC Test of Creative Ability was initiated in 1953 in the Spark Plug Division of General Motors. Since that time the test has been widely used in industry. It has been administered to over five thousand engineers and technical and supervisory personnel in the many divisions of the General Motors Corporation. Additionally, it has been administered in academic institutions and programs of adult education. Its use is indicated wherever there is a need to estimate the creative potential of an individual.

According to the publisher, the reliability of the AC Test of Creative Ability was estimated in two ways for all five parts of the test.

The first method was the Kuder-Richardson estimate of internal consistency. The reliability coefficient by this method was found to be .922 for the total test.

The second method used to estimate reliability was found by developing alternate forms of the test. One form was given to a group of 39 Automotive Engineers at AC Spark Plug Division before, and the alternate form given after, completion of a training program in creative thinking. While all the scores rose on the post-test (as a result of the emphasis during training) the ranking of the 39 was approximately the same as in the pre-test. The correlation between the scores from the parrallel forms was .749.

Several approaches were taken in determining the validity of the test. Some of the major studies (all of which were conducted at the AC Spark Plug Division) are described below. The first approach involved thirty-six men from the Automotive Engineering Division and the Master Mechanic's Section comprised the experimental group. By job classification, there were 14 experimental engineers, 13 tool designers, 3 method analysts, 3 suggestion investigators, and 3 process engineers. Their selection as an experimental group had been based on the ratings of their supervisors regarding:

1. Which men had consistently produced a Quantity of Unique ideas?
2. Which men had rarely demonstrated ideas of any kind?

Eighteen men were placed in each group on this basis. An examination of the results reported by the publisher indicated that each part's difference was found to be significant at the .05 level, while the reported t (4.94) for the difference of high and low groups on the total scale was significant at the .01 level.

The secondary validation group of the entire Manufacturing Devel-

opment Engineering Section of the AC Spark Plug Division. Thirty-five comprised this experimental group. Their chief engineer and his assistant had independently judged their over-all performance on creative tasks. Twenty-two of the group were reported as consistently satisfactory, which the performance of the remaining 13 in this respect had at one time or another been unsatisfactory. The results of the secondary validation study indicates a significant difference between the high and low group with each part at .05 level. Again the total score difference between the two groups was significant at the .01 level.

A third study was conducted, using as a criterion the number of suggestions turned in by AC hourly employees under the General Motors Employee Suggestion Plan. The study involved 28 pairs of individuals. Each pair had one man with an outstanding suggestion record (quantity of suggestions) and one man with a poor suggestion record. Each pair was matched, for example, both men in the pair coming from the same department, with the same supervisor, having the same job classification, and equivalent seniority. The combined quantity scores on the AC Test of Creative Ability were the most significantly (.01 level) related to the criterion (quantity of suggestions). Also the total score was found to be significant at the .05 level.

In addition to the studies performed at AC, 45 senior engineering students enrolled in a Product Design course at the Massachusetts Institute of Technology were given the AC Test of Creative Ability. The course is one where imagination is essential due to the nature of the material and projects given to the students. The instructor did not see the test results until after final grades had been assigned. The relationship between grades and test scores indicate that there was significant correlation between the grades A and B and the median creativity scores received at

the .01 level.

The instructor, in addition, gave subjective comments regarding the observed creative ability of each student, based upon his observation of their methods, questions, and performance. These comments were grouped in high, average, low, and questionable categories (the questionable being where the creative ability of the student was not clearly indicated or described). The relationship between the total test score and comments distribution seem to follow similar patterns.

Finally, this researcher used the Kuder-Richardson - 20 formula to determine the reliability of the three parts and total scores that were utilized for this study.

According to the creators of this instrument, "Creativity" is a behavior pattern which includes the following factors: sensitivity to problems, perception, fluency, novel ideas, flexibility of mind (ease at which one can change set), synthesizing ability, analysis ability, reorganizational or redefinition ability, complexity or intricacy of conceptual structure of which one is capable, motivational factors, attitudes, and temperament. To obtain a score of an individual's creative ability the following steps were taken because the short form (Part I, II, and V of the test) was utilized.

1. For each of these parts, the Quality score was calculated by awarding one point for each response given by the subject to each item in the part, and these scores were entered in the appropriate blocks included on the back of the booklet.

2. These raw scores were converted to standard scores by referring to the tables of standard score equivalents given by the norms section of the manual.

3. The total score for the test was obtained by summing the standard scores.

4. The summed standard score was converted to a standard score equivalent by again referring to the norm section of the manual.

5. Finally, the computed standard score of an individual's creative ability was categorized as being within one of five ranges from Very Low to Very High.

Check List for the Evaluation of Secondary Principals (CLESP). Information regarding the development and validation of the CLESP can be found in Maglaras' study, "Leadership Traits and Characteristics of Principals in Secondary Schools of Varying Degrees of Effectiveness." However, it is important for the reader to note that the researcher (Maglaras) started the development of his instrument by performing an extensive review of the literature and identifying over 300 items for possible inclusion in the instrument. These items were shortened by combining where possible.

The next step in the researcher's development of the CLESP (Appendix A) was the sharing of the identified items with fellow graduate students in the field of administration and supervision, secondary school principals, university professors, other professional colleagues, and members of his research committee. Based upon the information received from these groups the items were reviewed and shortened to 100 items. Utilizing the 100 items divided into nine (9) categories a survey instrument was developed that was sent to the North Central Association of Colleges and Secondary Schools' Chairmen which served as a validating committee. After the input received from the North Central Chairman, the researcher worked extensively with his committee and other university professors to refine the instrument that was used in his research.

The general categories for the CLESP, with short definitions, are as follows:

1. Role of Supervisor - program development and coordination; constructive criticism; and professional growth of staff.

2. Curriculum Development - program balance, integration coordination, and curricular goals.

3. Communications - two-way with staff, central administration and community; clarity of expression; and seeks feedback from staff.

4. Technical Skills - administrative skills; competency and mastery of administrative tasks; planning; routines and policies; delegation of responsibility; administrative priorities.

5. Decision Making - framework; procedure and process; foresight, perception and effectiveness.

6. Human Relations - understanding of self and staff; social insight; and concern for the individual.

7. Conceptual Skills - role as generalist in a world of specialists; integration and coordination of overall program; facilitator; creativity; organizational health, purpose and unity.

8. Professional Educator - professional growth and influence; relationships with the staff and school; and working for group goals.

9. Principal as a Person - personal characteristics, reactions, and overall impact.

Each of the sixty-seven indicators are scored on a continuum from one through seven. A "one" rating is least effective; a "seven" rating is most effective. A rating of "four" would signify an average rating. The test can be used to obtain a total score besides the nine categories mentioned earlier.

It is important to note that Maglaras reports that the instrument

provides valid data concerning the "evaluation of secondary principals." Specifically, when examining the ten categories (including the "Total" category) significance at the .01 levels was found in four categories, significance at .05 levels was found in three categories, and no significance was found in three categories (Appendix I). Nothing was reported by the researcher concerning the reliability of the instrument.

Leader Behavior Description Questionnaire Form XII (LBDQ - XII). The Leader Behavior Description Questionnaire (Appendix B) was developed by the Personnel Research Board at Ohio State University under the direction and supervision of John K. Hemphill and Alvin E. Coones. The Ohio State Leadership Studies concentrated on the behavior of the leader and attempted to identify the dimensions of leader behavior.

A collected list of 1,790 items describing leadership behavior was assigned to nine categories was the first step taken with the development of the LBDQ-XII. After assignment to these nine categories, it was found that considerable overlapping of items had occurred. Procedures were utilized which allowed the shortening of the number of items to 100 representing the following twelve defined dimensions of leadership which follow:

1. Representation - speaks and acts as the representative of the group.

2. Demand Reconciliation - reconciles conflicting demands and reduces disorder to system.

3. Tolerance of Uncertainty - is able to tolerate uncertainty and postponement without anxiety.

4. Persuasiveness - uses persuasion and argument effectively; exhibits strong convictions.

5. Initiation of Structure - clearly defines own role, and lets followers know what is expected.

6. Tolerance of Freedom - allows followers scope for initiative, decision, and action.

7. Role Assumption - actively exercises the leadership role rather than surrendering leadership to others.

8. Consideration - regards the comfort, well being, status, and contributions of followers.

9. Production Emphasis - applies pressure for productive output.

10. Predictive Accuracy - exhibits foresight and ability to predict outcomes accurately.

11. Integration - maintains a closely knit organization; resolves intermember conflicts.

12. Superior Orientation - maintains cordial relations with superiors; has influence with them; is striving for higher status.

All of the one hundred items that comprise the LBDQ-XII are scored. Questionnaire respondents, when describing leader behavior, indicated their opinions about each item by marking one of five possible choices. The teacher participants indicated their responses, for this study, to items on the questionnaire by drawing a circle around one of five letters following each item. Each letter was representative of an adverb indicating frequency of behavior: A - Always; B - Often; C - Occasionally; D - Seldom; E - Never. The five choices have a numerical value of 5, 4, 3, 2, and 1 respectively and are scored from left to right. Twenty items are stated negatively and, therefore, are scored in reverse.

Regardless of the scoring order, each item is worth from five to one point(s) with five representing the highest and usually most preferred score and one representing the lowest and usually least preferred score.

Although there are no norms or standards for the LBDQ-XII, a higher subscale score represents a higher level of behavior for the factor, a lower score representing a lower level of behavior for the factor. This should not, however, be interpreted to mean that high subscale scores for all dimensions are uniformly desired in all cases.

Again it should be noted that there are no norms for the LBDQ-XII. The questionnaire was designed for use as a research device. It is not recommended for use in selection, assignment, or assessment purposes.

The means and standard deviations for several highly selected samples are shown in Appendix J. The samples consist of commissioned and noncommissioned officers in an army combat division, the administrative officers in a state highway patrol headquarters office, the executives in an aircraft engineering staff, ministers of various denominations of an Ohio community, leaders in community development activities throughout the state of Ohio, presidents of "successful" corportations, presidents of labor unions, presidents of colleges and universities, and United States Senators.

The reliability of the subscales was determined by what is labelled as a modified Kuder-Richardson formula. The modification consists in the fact that each item was correlated with the remainder of the items in its subscale rather than with the subscale score including the item. This procedure yields a conservative estimate of subscale reliability. The reliability coefficients are shown in Appendix K.

Analysis of Data

The data for this study was analyzed using several statistical procedures. These procedures included Pearson's product-moment correlation, canonical analysis, partial analysis, and multiple regression analysis. Each of these procedures is described briefly below.

The Pearson product-moment correlation (r) was selected to determine the statistical significance of the first three research questions. Generally, the product-moment procedure establishes the magnitude of relationship, either positive or negative, or the absence of any relationship among various factors as stated in the hypotheses.

The magnitude of the Pearson product-moment correlation coefficient indicates whether there is a relationship between the variables under consideration. If the coefficient is not statistically equal to zero, there is evidence of a relationship and the null hypothesis can be rejected. If the coefficient is not significant, there is no evidence of a relationship and the null hypothesis cannot be rejected. Further to gain some feel for what the Pearson product-moment correlation (r) implies, it is often useful to consider what its square (r^2) signifies. The r^2 is the proportion of variance that two measures have in common. In contrast to r, the value of r^2 can be thought of in terms of a proportion or percentage of shared variance. Not only is r^2 helpful in considering the magnitude of correlation, it becomes particularly useful when considering correlation with reference to predicting values of one measurement from one or more measures, which is of interest as the last research question is examined.

To answer the fourth research question several statistical techniques were utilized. These techniques included: canonical analysis; partial analysis; and multiple regression analysis. The canonical analysis model assumes multiple criteria (nine subscales plus total of the Check List for Evaluation of Secondary Principals - CLESP) and multiple predictors (creativity, twelve subscales plus total of the Leader Behavior Description Questionnaire - LBDQ-XII). The goal of canonical analysis is

to define the primary independent dimensions which relate one set of variables to another set of variables. In canonical correlations the terms "predictor" and "criterion" are not typically used as either set of variables may be considered "predictor" or "criterion" depending on the content of the research.

According to Kerlinger:

> The basic idea of canonical analysis is that, through least-square analysis, two linear composites are formed, one for the independent variables X, and one for the dependent variables, Y. The correlation between these two composites is the canonical correlation. Like others, this correlation is the maximum possible correlation given the particular sets of data ...
>
> In addition to canonical correlations, sets of regression weights for both the independent and dependent variables are calculated. The weights can be used to determine which of the independent and dependent variables are more closely associated.[149]

The output of a canonical analysis should suggest answers to questions concerning the number of ways in which two sets of measures are related, the strength of the relationships, and the nature of the relationships.

The output from canonical analysis allows for a maximum number of independent multivariate relationships equal to the number of the original variables in the smaller of the two sets. For this study it is possible to have ten independent multivariate relationships since there are nine subscales plus the toal in one set. The use of the term "independent" indicates that the composite scores of the canonical variables will be uncorrelated on each side.

Canonical analysis is one of the most powerful statistical techniques available for comparing sets of data. Mathematically, "it can be shown that multiple regression is a subcase of canonical correlation."[150]

If the results of this analysis is not significant, then it can be said that no relationships exist between the two data. Consequently, if canonical correlations are significant, other less powerful statistical techniques may be used to identify these relationships. These additional techniques may include multiple regression analysis and/or partial correlation analysis.

The correlation between two variables is sometimes misleading and may be erroneous if there is little or no correlation between the variables other than that brought about by their common dependence upon a third variable (or several variables). In fact, the correlation may drop to zero if the variability caused by the third variable is eliminated. Generally, the partial correlation coefficient can be thought of as the product-moment correlation between the regression residuals of two variables, each regressed on a common set of additional variables. Since the set of additional variables may include one or several, a partial correlation coefficient may entail the statistical control of one or several variables. A partial correlation between X and Y based on the regression residuals on a single additional variable, Z, is symbolized $r_{xy.z}$ (Read: the correlation between X and Y controlling for Z). This is known as a first-order partial since one variable has been controlled. Naturally second, third ... K order partials can be determined. The interpretation of the partial correlation is similar to that of the Pearson product-moment correlation.

The correlation between a set of obtained scores and the same scores predicted from a multiple regression equation is called a coefficient of multiple correlation. It is designated by the letter R (called multiple R). The R symbol usually carries subscripts which indicate which variables are seen as related to a given variable. Suppose for an example that Z is the variable focused upon, and R indexes the multiple correlation of X and

Y with Z. The subscripts would be as follows: $R_{z.xy}$ whereas $R_{x.yz}$ would symbolize the multiple correlation of Y and Z with X. Similar to r^2, R^2 can be considered as a coefficient of multiple determination, i.e., the common variance shared.

The coefficient of multiple correlation is interpreted in much the same manner as r is in a two-variable problem. The null research hypotheses is that R = 0. This yields a value that can be interpreted to tell us the probability that the obtained multiple R could occur by sampling error. If this probability value is below that set for rejection, the hypothesis that variables X and Y have a significant multiple correlation with variable Z.

The problem of selecting a significance level is very important since it determined the probability of making Type I errors.

> The rejection of a true hypothesis is known as a Type I error. It can only occur when both of these conditions are met: (1) the hypothesis is rejected, and (2) the hypothesis is true. The probability of a Type I error is equal to the level of significance. It is controlled by the investigator; he may set it as high or low as he wishes.[151]

All hypotheses are tested in the null form and the probability for determining significance was established at the .05 level, for example, there is one chance in twenty (20) that a true hypothesis will be rejected.

Finally, it must be noted that this researcher realizes that in establishing a significance level of .05 that he has made a compromise between Type I and Type II error (accepting a null hypothesis when it should have been rejected). Therefore with all other factors being equal consider what the consequences are of changing the significance level. Suppose, for example, that we set it as $p < .01$. This would decrease the

probability of Type I error, but increase the probability of Type II error. The converse is also true. Suppose that the significance level were set at $p < .10$. This would have the effect of moving the significance level to the left, thus increasing the probability of Type I error, but decreasing the probability of Type II error.

CHAPTER IV

ANALYSIS OF RESULTS AND FINDINGS

This study investigated the relationships between perceptions of leader behavior, creativity and effectiveness of secondary school principals. A total of fifty schools participated in the study representing 1,815 completed Check List for the Evaluation of Secondary Principals (CLESP) and 315 completed Leader Behavior Description Questionnaires (LBDQ).

This chapter reports and describes the major findings related to the relationships between the variables described earlier. The chapter includes (1) description of the data (2) reliability (3) analysis of the data and (4) findings.

Description of the Data

After the completed AC Test of Creative Ability and questionnaires (CLESP and LBDQ) were received, the AC Test of Creative Ability was scored as outlined earlier and the results transferred to computer cards. Additionally, the data contained on the questionnaires was transferred to key punched cards for computer analysis. Statistical treatment of the data was performed by the Univac 1140 computer at the Computer Science Center of the University of Maryland (College Park) using the Statistical Package for the Social Sciences (SPSS) and several computer programs specifically developed by Dr. Clayton Stunkard (University of Maryland - College Park) for scoring, averaging, and computing reliability coefficients of the collected data.

The data, consisting of responses to the CLESP, LBDQ-XII, and the AC Test of Creative Ability were subjected to the statistical analysis outlined earlier. However, as an initial step the means and standard de-

viations for the categories of the CLESP and LBDQ-XII were computed for each individual school (Appendix L). The second statistical procedure utilized the data reported in Appendix L along with the creativity scores and the means, standard deviations, and ranges were computed. Appendix M presents the means, standard deviations, ranges, and number of cases for all variables. Inspection of the table in Appendix M shows that there was considerable range in the standard deviations of the creativity test as well as many of the subscales of the CLESP and LBDQ-XII. Low standard deviations indicate little variability in scores.

A close examination of the table in Appendix M indicates that the scores of the LBDQ-XII subscales ranged from a 17.652 on the "predictive accuracy" subscale to a 39.064 on the "initiating structure" subscale. The minimum obtainable score for subscales 1, 2, 10, and 11 is five, and for all other subscales is ten. The maximum attainable score for subscales 1, 2, 10, and 11 is 25, and 50 for all other subscales. When comparing this study with other Stogdill's studies (Appendix K) the means of the leader behavior subscales generally are lower on each subscale.

The AC Test of Creative Ability Manual reports a mean of standard score of 150.29, for example, converted standard score 50. The results of this study indicate a mean of 56.38 or standard score 167. Naturally this is substantially higher than the standardized mean.

The means and standard deviations for the total sample on each subscale of the CLESP are also presented in the table in Appendix M. The means for the sample ranged from a low on subscale "human relations" 20.126 to a high, 57.446 on the "person's" subscale. The minimum score for any item is one with a maximum score of seven. Consequently subscales could have the following ranges: subscales one, seven, and eight 8-56; subscale two 5-35; subscale three and four 7-49; subscale five 9-63; subscale six

4-28; and, subscale nine 11-77.

Reliability

To ascertain reasons for the statistical relationship or lack of relationship between creativity and the variables measured by the CLESP and LBDQ-XII, a close examination was made of the reliability of the AC Test of Creative Ability.

Reliability is often defined as precision of measurement, that is, the accuracy with which a test measures whatever it does measure. Adams states that reliability is

> ... the extent to which a test is consistent in measuring whatever it does measure: dependability, stability, relative freedom from errors of measurement. Reliability is usually estimated by some form of reliability coefficient or by the standard error of measurement.
> ... the reliability coefficient is the correlation between two forms of a test, between scores on repeated administration of the same test, or between halves of a test properly corrected. These three coefficients measure somewhat different aspects of reliability, but all are properly spoken of as reliability.[152]

As a first step in determining the reliability of the AC Test of Creative Ability the means, standard deviations, and simple correlations of the standardized three part scores, and total standardized score were determined. Reported in Table I are the correlation and reliability coefficients for the three part standardized scores and the total standardized scores. An examination of these tables indicates that all of the correlations were significant at .05 level and ranged from .56 to 1.00.

The reliability of the three parts of the AC Test of Creative Ability and total score were computed utilizing a modified Kuder-Richardson

formula. The results of this analysis are reported in Table I and indicate significant reliability justifying the use of this instrument.

TABLE I

SIMPLE CORRELATIONS AND RELIABILITY COEFFICIENTS

Standardized Components	Standardized Component Coefficients Part II	Part III	Total	Reliability Coefficients
Part I	.60*	.56*	.84*	.87
Part II		.58*	.85*	.87
Part III			.85	.89
Total				.92

*Significance at the .05 level.

As for the reliability of the LBDQ-XII, this information can be found in Appendix J as reported by Stogdill. Although it is possible to compute reliability coefficients for instruments similar to the LBDQ-XII and CLESP (instruments with several subscales) by removing each subscale, one at a time, and examining its reliability in relationship to remaining subscales by correlation procedures, this procedure was not utilized as a part of this study. This decision was based upon the knowledge that these coefficients would have been very conservative (small in magnitude) and of little use for interpretation and application to this study.

Comparing the means and standard deviation of this study with work done by Maglaras (Appendix I) it should be noted that each of the means of this study is higher than those reported by Maglaras. Further, it should be noted that Maglaras' standard deviations are higher in each case.

Analysis of the Data and Findings

The facilities of the University of Maryland (College Park) - Computer Science Center and the Statistical Package for the Social Sciences - SPSS were utilized to facilitate the analysis of the data. Each question posed by the study will be considered separately in the following sections of this chapter.

Research Question One: What is the relationship between creativity and perceptions of the leader's behavior (includes twelve subscales), for example,

a. What is the relationship between creativity and representation?

b. What is the relationship between creativity and demand reconciliation?

c. What is the relationship between creativity and tolerance of uncertainty?

d. What is the relationship between creativity and persuasiveness?

e. What is the relationship between creativity and initiation of structure?

f. What is the relationship between creativity and tolerance of freedom?

g. What is the relationship between creativity and role assumption?

h. What is the relationship between creativity and consideration?

i. What is the relationship between creativity and production emphasis?

j. What is the relationship between creativity and predictive accuracy?

k. What is the relationship between creativity and integration?

l. What is the relationship between creativity and superior orientation?

Hypothesis 1: There is a positive relationship between creative ability and measures of perceived leadership behavior (includes twelve subscales) of secondary principals. Symbolically, the null may take this form H_0: $r = 0$ (.05 level); while its alternative is H_1: $r > 0$.

The Pearson product-moment correlation was calculated to measure the relationship between creativity and perceived leader behavior. The mean score of creativity as well as the mean scores of the twelve dimensions (subscales) of the LBDQ-XII were used. These results are reported in Table II.

TABLE II

CORRELATION COEFFICIENTS FOR CREATIVITY AND LBDQ-XII DIMENSIONS

LBDQ Dimension	Coefficient
Representation	.195
Demand Reconciliation	.016
Tolerance of Uncertainty	-.040
Persuasiveness	-.018
Initiation of Structure	-.127
Tolerance of Freedom	-.062
Role Assumption	.178
Consideration	-.134
Production Emphasis	.043
Predictive Accuracy	-.056
Integration	.029
Superior Orientation	-.072

*Significance at .05 level for one tail test requires r = .2358.

Each correlation is based on a sample size of fifty (50). For forty-eight degrees of freedom, an r of .2358 is required for significance at the .05 level, consequently, the null hypothesis was accepted for each case.

Research Question Two: What is the relationship between creativity and effectiveness of secondary principals, for example,

a. What is the relationship between creativity and the "role of supervisor?"

b. What is the relationship between creativity and "curriculum development?"

c. What is the relationship between creativity and the establishment of "communication" channels?

d. What is the relationship between creativity and "technical" (administrative) skill?"

e. What is the relationship between creativity and "decision making" procedures?

f. What is the relationship between creativity and "human relations" activities?

g. What is the relationship between creativity and "conceptual skills?"

h. What is the relationship between creativity and performance as a "professional educator?"

i. What is the relationship between creativity and the "principal as a person?"

Hypothesis 2: There is a positive relationship between creative ability and measures of effectiveness (includes nine subscales) of secondary principals. Symbolically, the null is expressed as H_0: $r = 0$; while its alternative looks like H_2: $r \quad 0$.

Again the Pearson product-moment correlation was used to determine the relationship between creativity and effectiveness of secondary principals. The mean scores of the CLESP (includes nine subscales) and the AC Test of Creative Ability were used. The results are reported in Table III. Each correlation is based on a sample size of fifty (50). With forty-eight degrees of freedom a correlation coefficient is .2361 is required in order to be significant at .05 level. Obviously, the null hypothesis was "accepted" for each case.

TABLE III

CORRELATION COEFFICIENTS FOR CREATIVITY AND CLESP DIMENSIONS

CLESP Dimensions	Coefficient
Role of Supervisor	-.120
Curriculum Development	-.139
Communication	-.093
Technical Skills	-.017
Decision Making	-.091
Human Relations	-.143
Conceptual Skills	-.088
Professional Educator	-.136
Principal as a Person	-.101

* Significance at .05 level for one tail test requires r = .2358

Research Question Three: What is the relationship between perceptions of leadership behavior (twelve dimensions) and effectiveness of secondary principals (nine dimensions)?

Hypothesis 3: There is a positive relationship between scores secondary principals receive relative to their perceived leadership behavior (twelve dimensions) and measures of their effectiveness (nine dimensions). Once again the symbolic form of the null is H_0: $r = 0$ (.05 level); while the alternative form is H_3: $r > 0$.

TABLE IV

CORRELATION COEFFICIENT FOR LBDQ AND CLESP DIMENSIONS

LBDQ Dimensions	CLESP Dimensions				
	Role of Supervisor	Curriculum Development	Communication	Technical Skills	Decision Making
Representation	.12	.04	.10	.11	.05
Demand Reconciliation	.46*	.41*	.46*	.47*	.50*
Tolerance of Uncertainty	.46*	.40*	.51*	.31*	.45*
Persuasiveness	.40*	.31*	.28*	.33*	.32*
Initiation of Structure	.33*	.21	.26	.31*	.27*
Tolerance of Freedom	.44*	.34*	.43*	.24*	.37*
Role Assumption	.30*	.19	.20	.28*	.25*
Consideration	.51*	.43*	.50*	.38*	.49*
Production Emphasis	.21	.13	.08	.20	.13
Predictive Accuracy	.50*	.41*	.43*	.43*	.48*
Integration	.60*	.51*	.54*	.47*	.50*
Superior Orientation	.37*	.34*	.34*	.31*	.33*

* Significance at the .05 level for one tail test requires r = .2358

TABLE IV (CONTINUED)

CORRELATION COEFFICIENT FOR LBDQ AND CLESP DIMENSIONS

LBDQ Dimensions	CLESP Dimensions			
	Human Relations	Conceptual Skills	Principal - Educator	Principal as a Person
Representation	.10	.11	.10	.06
Demand Reconciliation	.38*	.42*	.46*	.44*
Tolerance of Uncertainty	.55*	.43*	.50*	.49*
Persuasiveness	.25*	.34*	.32*	.28*
Initiation of Structure	.17	.26*	.29*	.22
Tolerance of Freedom	.49*	.40*	.43*	.41*
Role Assumption	.12	.22	.24*	.19
Consideration	.53*	.47*	.53*	.51*
Production Emphasis	-.01	.09	.09	.00
Predictive Accuracy	.34*	.40*	.45*	.39*
Integration	.50*	.53*	.55*	.48*
Superior Orientation	.25*	.34*	.33*	.29*

* Significance at the .05 level for one tail test requires r = .2358

An inspection of Table IV indicates that the null hypothesis was "rejected" at the .05 level for the majority of the 108 simple correlations. Additionally, Table IV indicates that the null hypothesis should be accepted for the following relationships: Representation with the nine subscales (variables) of the CLESP; Production Emphasis with the nine variables of the CLESP; Initiating Structure with Curriculum Development, Human Relations, and Principal as a Person; Role Assumption with Curriculum Development, Communication, Human Relations, Conceptual Skills and the Principal as a Person.

Research Question Four: What is the interaction effect of creativity, and perceptions of leadership behavior upon effectiveness?

Hypothesis 4: There is a positive relationship between the interaction effect of the creative ability of principals with measures of their perceived leadership ability upon measures of their effectiveness?

Several statistical procedures were used to answer question four. These procedures were selected because they allowed an examination of data both collectively and singularly. The most powerful of these procedures is canonical analysis which generates the following hypothesis: H_4: $J > M$, H_0: $J = M$ where $J = A_1 X_1 + A_2 X_2 + A_3 X_3 \ldots A_{13} X_{13}$ and $M = E_1 Y_1 + E_2 Y_2 + E_3 Y_3 \ldots E_9 Y_9$. A_1 and E_1 are the weights which maximize the correlation between J and M. As outlined earlier canonical analysis is an exceedingly powerful multivariate technique used to determine the presence and strength of relations between two sets of variables. For this study the two sets of variables were: (1) the nine subscales of the CLESP and (2) the twelve subscales of the LBDQ with the creativity scores of each principal. As a result of the canonical analysis the null hypothesis that one group of variables is unrelated to the other variables was "accepted" (Table V).

TABLE V

CANONICAL ANALYSIS RESULTS

Coefficients for Canonical Variables			
First Set		Second Set	
Supervision	- .53	Creativity	.29
Curriculum	- .61	Representation	.46
Communication	- .26	Reconciliation	.31
Technical Skills	1.29	Tolerance of Uncertainty	- .33
Decision Making	-1.58	Persuasion	.28
Human Relations	- .89	Tolerance of Freedom	- .47
Conceptual Skills	1.47	Structure	.89
Professional	.57	Consideration	- .24
Principal as a Person	- .14	Role Assumption	- .38
		Predictive Accuracy	- .37
		Integration	.25
		Superior Orientation	- .32

No canonical correlation found at the .05 level of significance

The second procedure utilized to answer question four was partial correlation (H_4: $r_{jd.m} > 0$, H_0: $r_{jd.m} = 0$). Partial correlation procedure allows the examination of relationship between two variables while controlling for the effects of one or more variables. Of specific interest was the relationship between the CLESP variables and LBDQ variables while controlling for creativity. Once again the null hypothesis was "accepted", for example, the partial correlations were not significant beyond those discovered with the Pearson product-moment correlation (Table VI).

Finally, to ascertain information relative to question number four, the data was subject to multiple regression analysis (H_4: $R > 0$, H_0: $R = 0$). Multiple regression analysis is generally used to determine the relationship between a dependent and one or more independent variables. Specifically as a descriptive tool it has the following uses:

> (1) to find the best linear prediction equation and evaluate its prediction accuracy (2) to control for other confounding factors in order to evaluate the contribution of a specific variable or set of variables; and (3) to find structual relations and provide explanations for seemingly complex multivariate relationships, such as is done in path analysis.[153]

For this study the focus is the prediction of the dependent variable and its overall dependence on a set of independent variables if any, and the relationship between the dependent variable and a particular independent variable(s). To facilitate the development of this approach the variables have been referenced in the following manner:

TABLE VI

PARTIAL CORRELATION COEFFICIENTS CONTROLLING FOR CREATIVITY

LBDQ Dimensions	Role of Supervisor	Curriculum Development	Communication	Technical Skills	Decision Making	Human Relations
Representation	.15	.07	.12	.11	.07	.04
Demand Reconciliation	.46*	.41*	.45*	.47*	.50*	.38*
Tolerance of Uncertainty	.46*	.39*	.51*	.31*	.45*	.55*
Persuasiveness	.40*	.31*	.28*	.33*	.32*	.25*
Initiation of Structure	.32*	.20	.25*	.31*	.26*	.15
Tolerance of Freedom	.43*	.33*	.43*	.24*	.36*	.49*
Role Assumption	.33*	.22	.22	.29*	.27*	.15
Consideration	.50*	.41*	.50*	.39*	.49*	.52*
Production Emphasis	.21	.14	.08	.20	.14	-.01
Predictive Accuracy	.49*	.40*	.43*	.43*	.48*	.34*
Integration	.60*	.51*	.55*	.47*	.50*	.51*
Superior Orientation	.36*	.33*	.34*	.31*	.33*	.24*

* Significance at .05 level for one tail test requires r = .2358

TABLE VI (CONTINUED)

PARTIAL CORRELATION COEFFICEINTS CONTROLLING FOR CREATIVITY

BLDQ Dimensions	Conceptual Skills	Principal - Educator	Principal as a Person
Representation	.13	.13	.08
Demand Reconciliation	.42*	.46*	.44*
Tolerance of Uncertainty	.43*	.50*	.49*
Persuasiveness	.34*	.32*	.27*
Initiation of Structure	.25*	.28*	.21
Tolerance of Freedom	.39*	.43*	.41*
Role Assumption	.24*	.27*	.21
Consideration	.46*	.52*	.50*
Production Emphasis	.13	.10	.00
Predictive Accuracy	.39*	.44*	.39*
Integration	.54*	.56*	.49*
Superior Orientation	.34*	.33*	.28*

* Significance at .05 level for one tail test requires r = .2358

Dependent (Criterion) Variables(CLESP)	Independent (Predictor) Variables(LBDQ)
Y_1 = Role of Supervisor	X_1 = Demand Reconciliation
Y_2 = Curriculum Development	X_2 = Representation
Y_3 = Communication	X_3 = Tolerance of Uncertainty
Y_4 = Technical Skills	X_4 = Persuasiveness
Y_5 = Decision Making	X_5 = Initiation of Structure
Y_6 = Human Relation	X_6 = Tolerance of Freedom
Y_7 = Conceptual Skills	X_7 = Role Assumption
Y_8 = Professional Educator	X_8 = Consideration
Y_9 = Principal as a Person	X_9 = Production Emphasis
	X_{10}= Predictive Accuracy
	X_{11}= Integration
	X_{12}= Superior Orientation
	X_{13}= Creativity

Multiple regression provides techniques by which a prediction equation indicates how scores on the independent variables can be weighted and summed to obtain the best possible prediction. Table VII reports the weights of the indicated variables in the prediction equation as well as the Multiple R, R^2, and constant values. Only those independent variables which account for additional four percents of the shared variance are included in the prediction equation. As an example, the dependent variable Y_1, role of supervisor, generates the following prediction equation:

$$Y_1 = 29.36 + 1.49\ X_{11} + (-.65)\ X_2$$

With this equation the researcher can compute a predicted "role of supervisor" score from any combination of "integration" and "representation" values.

Generally, as a result of multiple regression analysis the variables: integration, tolerance of uncertainty, representation, tolerance

of freedom, and demand reconciliation emerge as significant variables for prediction of dependent variables. Further, it is important that the variables representation and tolerance of freedom have negative values when summed as a part of the prediction of the dependent variable.

TABLE VII

MULTIPLE REGRESSION RESULTS

Dependent Variables	Constant	Independent Variable Weights						Regression Coefficients	
		X_1	X_2	X_3	X_6	X_8	X_{11}	X_{12}	R	R^2
Y_1	26.36		-.65				1.49		.62	.39
Y_2	15.96		-.82				.74	.34	.60	.36
Y_3	7.44			.40			.77		.60	.36
Y_4	15.81	.80		.43	-.68		.82		.58	.34
Y_5	12.87			.84	-.61		1.26		.58	.34
Y_6	- 1.54			.39			.45		.61	.37
Y_7	15.83						.98		.53	.28
Y_8	5.81			.48					.60	.36
Y_9	20.03					1.03			.51	.26

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The Problem

The leadership challenges of principalship are unavoidable and must bet met. It appears that the principal is the most crucial variable in determining quality of the instructional program, efficiency of the building, and effectiveness of the instructional programs that he administers. The principal must balance the needs of his organization against the demands of external forces found in the community while maintaining another balance between the needs and demands of his faculty and his students. Therefore, the principal's ability to organize, delegate, and communicate; the skills he exhibits in human relations, technical, and conceptual skills; his goals and aspirations and how they are communicated to all who are concerned with the school; his total over-all impact on the program of the school are important and worthy of investigation.

The broad purpose of this study was to contribute knowledge to the selection of school principals. Specifically, the purpose of the study was to examine the relationships among measures of the variables of creativity, views of leader behavior, and effectiveness of secondary principals to determine variables that can be used for the selection, placement, and evaluation of secondary principals. Further, it is important to note that this study attempted to define patterns and characteristics of leadership of principals in schools with varying degrees of effectiveness; consequently, identifying new criteria for selecting, placing, and evaluating principals that may be used.

Three instruments were used to ascertain the necessary information for this study: AC Test of Creative Ability, Check List for Evaluation of Secondary Principals (CLESP), and the Leader Behavior Description Questionnaire-XII (LBDQ-XII). The LBDQ-XII is the fourth revision of the LBDQ developed by the Personnel Research Board at Ohio State University during the late 1950's. The questionnaire, designed to measure the behavior of leaders as perceived by others, consist of one hundred items covering twelve factors or dimensions of leader behavior. In this study, the questionnaire was used to determine the perceptions teachers have of their building principal.

The CLESP was developed by Tom Maglaras, University of Colorado, in 1970. The CLESP like the LBDQ-XII can be used by teachers to rate their principals. The instrument contains sixty-seven indicators for nine dimensions. Each indicator is scored on a continuum from one to seven. A "one" rating is least effective; a "seven" rating is most effective. A rating of "four" would signify an average rating. Naturally, the instrument can be used to obtain a total score besides the nine dimensions.

The AC Test of Creative Ability is a paper-and-pencil test which can be administered to individuals or to groups. The development of the AC Test of Creative Ability was initiated in 1953 by the Spark Plug Division of General Motors. Since that time the test has been widely used in industry. It has been administered to over five thousand engineers, technical and supervisory personnel in the many divisions of the General Motors Corporation. Additionally, it has been administered in academic institutions and programs of adult education. Its use is indicated wherever there is a need to estimate the creative potential of an individual.

Hypotheses

Under investigation were four major hypotheses each representing several secondary questions. The hypotheses stated: (1) There is a positive relationship between creative ability and measures of perceived leadership behavior of secondary principals; (2) there is a positive relationship between creative ability and measures of the effectiveness of secondary principals; (3) there is a positive relationship between scores secondary principals receive relative to their perceived leader behavior and measures of their effectiveness; and (4) there is a positive relationship between the interaction effect of the creative ability of principals with measures of their perceived leadership ability and measures of their effectiveness.

The secondary questions were stated in the same form as the major hypotheses and related to the subscales (dimensions) of the LBDQ-XII and CLESP. The twelve subscales of the LBDQ-XII are: representation, demand reconciliation, tolerance of uncertainty, persuasiveness, initiation of structure, tolerance of freedom, role assumption, consideration, production emphasis, predictive accuracy, integration, and superior orientation. Additionally, the nine subscales of the CLESP are: supervision of instruction, curriculum, communications, technical skills, decision-making, human relations, conceptual skills, professional educator, and principal as a person.

Procedure and Population

Selected for participation in this study were schools from the following school districts in Maryland: Allegany, Anne Arundel, Baltimore City, Baltimore County, Calvert, Caroline, Carroll, Cecil, Charles, Dorchester, Frederick, Garrett, Harford, and Howard Counties. It was as-

sumed that the teacher population for the fifty (50) schools included in this study, from the listed districts, provide a representative sample.

Generally, letters were sent to all principals within the identified districts requesting their participation and cooperation in the study. After permission was granted for the study to be conducted within the schools all principals were mailed packets of materials for each teacher. Naturally, these packets included directions as well as a return envelope.

All teachers were requested to complete the CLESP. By random procedure teachers were identified to complete the LBDQ-XII which indicated their perceptions of their principal's leader behavior. The population generated the following data: 50 completed AC Test of Creative Ability (principals); 1,815 completed CLESP instruments, and 315 completed LBDQ-XII.

Statistical Procedures

The collected data were subjected to the Pearson product-moment correlation, multiple regression, and canonical analysis. Additionally, the means, standard deviations, and ranges for each school were computed. The level of significance for all tests was set at the .05 level.

Findings

The analysis of the data on the dimensions of the LBDQ-XII, CLESP, and scores of the AC Test of Creative Ability provided evidence for the acceptance or rejection of the hypotheses under investigation. All research hypotheses were stated in directional form, for example, a positive relationship between the variables under analysis exist.

The first major hypothesis and its secondary questions that a positive relationship between creative ability and leader behavior of secondary principals was not supported. Statistical analysis of the data

provided evidence that at the .05 level with the population tested creativity is not related to perceptions of leader behavior of secondary principals. Similar evidence was found for the second hypothesis that a positive relationship between creative ability and effectiveness of secondary principals does not exist.

Generally, the third hypothesis was supported by the results of the study. This hypothesis stated that there is a positive relationship between scores secondary principals receive relative to their perceived leader behavior and measures of their effectiveness. Results provided evidence for support of this hypothesis with significance at .05 for all dimensions except representation, production emphasis, initiating structure, and role assumption.

The fourth hypothesis stated that there is a positive relationship between the interaction effect of creative ability of principals with measures of their perceived leadership ability and measures of their effectiveness was not supported at the .05 level. However, the following relationship emerged as important: role of supervision with integration, and representation; curriculum development with integration, representation, and superior orientation; communications with integration, and tolerance of uncertainty; technical skills with integration, demand reconciliation, tolerance of freedom, and tolerance of uncertainty; decision making with integration, tolerance of uncertainty, and tolerance of freedom; human relations with tolerance of uncertainty, and integration; conceptual skills with integration; professional educator with integration, and tolerance of uncertainty; principal as a person with consideration.

CONCLUSIONS

The findings of the study suggest that the following conclusions may be drawn.

1. The creative ability of secondary principals is not directly related to the leader behavior that they exhibit.

2. The effectiveness of secondary principals as measured in this study is not directly related to their creative ability.

3. Generally, the effectiveness of secondary principals is directly related to their exhibited and perceived leader behavior. Specifically, those principals who are effective are perceived by their teachers as individuals who can: handle conflicting demands; accept postponement and do not worry about outcomes of new procedures; have strong convictions and utilize arguments effectively; encourage initiative in their teachers and encourage teachers to use good judgement; are friendly and approachable; have things turn out right for them; build team work within their building; and are working to get to the top.

On the other hand, the effectiveness of secondary principals is not related to their perceived ability to: act as a spokesman for teachers; let teachers know what is expected of them with regards to program balance; and, define his role as to his concern for his teachers as individuals.

4. There is no interaction of creativity, perceptions of leadership behavior with respect to effectiveness. However, for prediction purposes concerning administrative effectiveness the secondary principal's perceived ability: to pull together his teachers; work with his superiors; represent his staff; maintain a closely knit organization; and resolve internal conflict emerge as important.

IMPLICATIONS

The results of this study would appear to warrant several implications. Primarily, the results of the study reveal that there is no significant relationship between creativity and effectiveness; and creativity and perceptions of leader behavior. Implied in these results are:

1. The findings of this study suggest criteria that may be helpful in establishing guidelines for identifying, training, and staffing of school principalships.

2. Teacher perceptions of principals' leader behavior have a positive relationship to measures of effectiveness of secondary principals. Generally, the results of the study establish a direct relationship between perceptions of leader behavior and measures of effectiveness; consequently, teacher perceptions may be examined to determine effectiveness of principals.

3. If we accept the limitations of the study and measurement of the variables; unfortunately, we must conclude that the qualities measured (creativity, perception of leader behavior, and effectiveness of secondary principals) are not present and operating simultaneously within the identified sample.

4. That a principal may in fact score high on the creative test; however, it is possible that the test is not related to the functions, duties, and responsibility of a principal. Specifically, it is possible that the AC Test of Creative Ability is not appropriate in regards to school situations.

5. That the selection process currently being used by school systems does not encourage creative persons to become principals. Further, the duties and responsibilities of principalship could discourage people

from seeking the position.

6. The position of principalship could be an insecure position; consequently, those in the position will not undertake any new or creative programs.

More general implications suggested by the results of the study are:

7. Until we recognize the importance of creative administration, and establish formal programs to develop creativity, we can expect to find little or no positive relationship between creativity perceptions of leader behavior, and effectiveness of secondary principals.

8. The findings of the study have enhanced criteria that may be used to predict measures of effectiveness. Specifically, teachers' perceptions of a principal's ability to pull the group together; handle postponement; act and speak for the group; and allow teachers a scope for initiative appears most frequently.

9. Finally, the results of the study may well lead to other studies.

RECOMMENDATIONS

Based upon the review of the literature, findings, and conclusions of this study, the following recommendations are appropriate:

1. That should this research be replicated, an effort be made to involve superordinates in the evaluation of principals.

2. That an effort be made to determine the minimum sample size required to complete the CLESP. Present procedures require that the CLESP be administered to the entire staff. This procedure seems to hinder research efforts.

3. That the research be replicated and a more appropriate measure of creativity be utilized. The AC Test of Creative Ability appears to be a valid and reliable measure of creativity; however, an instrument that is geared to administrative creativity might prove more interesting. Generally, this instrument could measure the administrator's creative ability with schedule making, decision making, staffing assignments and innovative programs.

4. That since the LBDQ-XII was used to ascertain information about teacher perceptions of their principal's leader behavior. The duplication of this study using other measures of perceived leader behavior might prove interesting and informative. One such instrument that could be used is the LBDQ.

5. That nothing was done to determine the accuracy of the information presented by teachers. The information was accepted as true and honest judgements by teachers of the perceived leader behavior of principals; however, a correlational study of teacher perceptions of principals and principals perceptions of themselves seems to be in order.

6. That a comparative study of creative ability with various or-

ganizations be undertaken. The results of this study indicate that the qualities of creativity and effectiveness do not operate simultaneously within school situations. A study comparing the creative ability of school administrators with that of business, industry, and military organization leaders seems appropriate. Hopefully, the study would answer the question concerning which organization promotes creativity and how school organizations compare to these organizations?

7. That a correlational study be undertaken using the CLESP and accreditation reports of secondary schools.

8. The results of this study indicate that the LBDQ and CLESP may be utilized for the selection of principals. Additionally, it appears that the CLESP may be used by Boards and other superordinates of principals to gain information about the effectiveness of secondary building administrators.

9. Further, the CLESP and LBDQ-XII can be valuable tools used by principals to obtain feedback concerning how they are perceived by their teachers.

10. Lastly, the LBDQ-XII should be reviewed, since the findings of this study indicate that only a few dimensions account for major portions of the explained variance. Specifically, the dimensions of the LBDQ-XII may be reduced to a smaller number.

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APPENDIX A

Check List for the Evaluation of Secondary School Principals (CLESP)

Check List For The Evaluation of Secondary Principals (CLESP)

INTRODUCTION

The Check List for the Evaluation of Secondary Principals (CLESP) is an instrument designed to measure the degree of effectiveness of your principal in specific leadership characteristics. The CLESP will yield a profile of a principal's leadership traits as judged by his staff. It is important that your answers be independent; please do not discuss your ratings with others as you complete the check list.

INSTRUCTIONS

1. Please read each item carefully and, before responding have a clear mental image of the specific competency on which the principal is being evaluated.
2. Apply this evaluation to your principal in an honest, forthright manner.
3. Even though you may think that you do not have all the relevant facts regarding a particular question, please answer as best you can.
4. Please respond to EVERY item.
5. Consider the check list evaluation as a continuum from one through seven. A "one" rating is LEAST effective; a "seven" rating is MOST effective. A rating of "four" would signify an AVERAGE rating.
6. Give credit where credit is due. If your principal is particularly effective in specific items, rate him accordingly. If he is particularly ineffective in specfiic items, rate him accordingly. Do not hesitate to use extremes: THE VALUE AND EFFECTIVENESS OF THIS CHECK LIST DEPEND UPON YOUR CONSIDERED AND HONEST RESPONSES.
7. There is no time limit. However, the approximate time for completion of the check list is 25 minutes.
8. Your responses will be held in strict confidence.

RATING GUIDE

1. Very Poor
2. Poor
3. Below Average
4. Average
5. Above Average
6. Very Good
7. Excellent

Created By
DR. TOM MAGLARAS
University of Colorado

Directions: DRAW A CIRCLE AROUND THE NUMBER WHICH CORRESPONDS TO YOUR RATING.

Rating Guide

1. Very Poor
2. Poor
3. Below Average
4. Average
5. Above Average
6. Very Good
7. Excellent

Check List Items

1. He makes classroom visitations purposeful and helpful in nature.	1 2 3 4 5 6 7
2. His evaluation and supervision of teachers place emphasis on strengths as well as on constructive criticism.	1 2 3 4 5 6 7
3. He successfully encourages and helps experienced teachers to upgrade their performance.	1 2 3 4 5 6 7
4. His recommendations and evaluations are discussed with the teacher prior to their submission to the central office.	1 2 3 4 5 6 7
5. He encourages staff self-evaluation.	1 2 3 4 5 6 7
6. He shows confidence and trust in specialized skills and abilities of staff members.	1 2 3 4 5 6 7
7. He places emphasis on the quality of the instructional process as well as on curricular content.	1 2 3 4 5 6 7
8. He encourages teachers to seek help from the various specialists on the staff to deal with students who have unique problems.	1 2 3 4 5 6 7
9. He defends sound educational programs and teaching practices against community attacks and complaints.	1 2 3 4 5 6 7
10. He is acquainted with and shows an understanding of the goals and progress of the various departments.	1 2 3 4 5 6 7
11. He employs sound principles of child growth and development as guides for all instructional decisions.	1 2 3 4 5 6 7
12. He regards the curriculum as a flexible tool to be adjusted to the needs of the student and the skills of the teacher.	1 2 3 4 5 6 7
13. He encourages and is receptive to suggestions for curricular change which grow out of new programs and research in the various subject matter fields.	1 2 3 4 5 6 7
14. His communications, written and oral, are complete, relevant, concise, and free of potential misinterpretations.	1 2 3 4 5 6 7
15. He is willing to hear and consider the opinions of others.	1 2 3 4 5 6 7
16. He encourages frank and critical faculty comment regarding all aspects of the school and its program.	1 2 3 4 5 6 7
17. He communicates the objectives of the school program to the faculty.	1 2 3 4 5 6 7
18. He represents the departmental and total staff interests to the superintendent and board of education in a clear and effective manner.	1 2 3 4 5 6 7
19. He provides opportunity for inter-departmental communication which educates the staff regarding the total school program.	1 2 3 4 5 6 7
20. He communicates school policies, accomplishments, and goals to the community.	1 2 3 4 5 6 7
21. He clearly defines the operational policies and various rules, regulations and procedures that pertain specifically to the school.	1 2 3 4 5 6 7

Directions: DRAW A CIRCLE AROUND THE NUMBER WHICH CORRESPONDS TO YOUR RATING.

Rating Guide

1. Very Poor
2. Poor
3. Below Average
4. Average
5. Above Average
6. Very Good
7. Excellent

Check List Items

22. He makes a conscientious effort to avoid unscheduled interferences with the instructional program.	1 2 3 4 5 6 7
23. His delegation of authority and responsibility is deliberately and carefully planned.	1 2 3 4 5 6 7
24. His delegation of authority and responsibility is distributed so that it fully utilizes the capabilities of the staff.	1 2 3 4 5 6 7
25. He demonstrates an ability to get important things done well and on time.	1 2 3 4 5 6 7
26. His construction of the schedule is designed to bring together teachers, students, materials, and facilities in the most effective manner.	1 2 3 4 5 6 7
27. He asks each department to contribute to a faculty review of the proposed class schedule for recommendations and suggestions.	1 2 3 4 5 6 7
28. His decisions form a consistent pattern.	1 2 3 4 5 6 7
29. His decision-making procedure involves in a meaningful way those who will be affected by the decision.	1 2 3 4 5 6 7
30. His decision-making procedure secures the services of those best qualified to contribute to the decision.	1 2 3 4 5 6 7
31. His decision-making procedure includes provisions for implementation of the decision.	1 2 3 4 5 6 7
32. His decisions are preceded by organized information gathering and consideration of potential effects on all departmental programs and plans.	1 2 3 4 5 6 7
33. His decisions, once made, are followed by decisive definite action.	1 2 3 4 5 6 7
34. His decision-making is followed by evaluation, with modification of action if the situation warrants it.	1 2 3 4 5 6 7
35. Decisions regarding staff members are discussed with and explained to the members involved.	1 2 3 4 5 6 7
36. He selects the course of action which will give the greatest educational return from the available resources.	1 2 3 4 5 6 7
37. He fosters mutual respect, support, and cooperation among the members of the staff.	1 2 3 4 5 6 7
38. He commends individuals, departments, students, and the entire staff for work and projects which are well done.	1 2 3 4 5 6 7
39. He maintains school goals and staff behavior expectations in a manner that does not degrade the individual.	1 2 3 4 5 6 7
40. He makes you feel that your role is an important aspect of the total program.	1 2 3 4 5 6 7
41. His leadership activities infuse the school with a sense of direction and purpose.	1 2 3 4 5 6 7
42. He maximizes the various skills and abilities found in the faculty.	1 2 3 4 5 6 7

Directions: DRAW A CIRCLE AROUND THE NUMBER WHICH CORRESPONDS TO YOUR RATING.

Rating Guide

1. Very Poor
2. Poor
3. Below Average
4. Average
5. Above Average
6. Very Good
7. Excellent

Check List Items

43. He maintains definite and realistic standards of performance.	1	2	3	4	5	6	7
44. He provides an organizational framework and philosophy in which staff members are allowed to explore their creative ideas and goals.	1	2	3	4	5	6	7
45. His leadership patterns are flexible (directive or democratic) as the situation may demand.	1	2	3	4	5	6	7
46. He recognizes and understands the forces that generate change and utilizes them in his acts of leadership.	1	2	3	4	5	6	7
47. He extends his leadership beyond the strict legal and delegated dimensions to include opportunities provided by the dynamics of his position.	1	2	3	4	5	6	7
48. He resists efforts of outside groups to divert the school from its goals or to create imbalance in its program.	1	2	3	4	5	6	7
49. He exhibits a willingness and an ability to work unselfishly and impartially for the common good.	1	2	3	4	5	6	7
50. He lives the philosophy that he serves primarily to facilitate and improve the instructional program of the school.	1	2	3	4	5	6	7
51. His response to staff concerns is understanding and accepting.	1	2	3	4	5	6	7
52. He combines tact with frankness in evaluating situations.	1	2	3	4	5	6	7
53. He handles delicate staff interpersonal situations in a tactful manner.	1	2	3	4	5	6	7
54. He is introspective, seeking to identify and improve upon his leadership deficiencies.	1	2	3	4	5	6	7
55. His knowledge of secondary education is extensive, and he is able to relate it to current developments and practices.	1	2	3	4	5	6	7
56. His superiors have confidence in his administrative skills and educational judgement.	1	2	3	4	5	6	7
57. He possesses a good sense of humor.	1	2	3	4	5	6	7
58. He possesses the verbal ability necessary to communicate his responsibilities to others.	1	2	3	4	5	6	7
59. He possesses the intelligence necessary to cope with his responsibilities.	1	2	3	4	5	6	7
60. He responds to stress situations in a calm, collected approach.	1	2	3	4	5	6	7
61. He avoids conveying to the staff his problems and frustrations which are not their concern.	1	2	3	4	5	6	7
62. His judgement is respected by the staff.	1	2	3	4	5	6	7
63. He has the ability and initiative to carry out both long and short range plans.	1	2	3	4	5	6	7
64. He can be trusted to keep his word.	1	2	3	4	5	6	7
65. His actions are guided by principles rather than expediency.	1	2	3	4	5	6	7
66. He is ethical and professional in his relationships with others.	1	2	3	4	5	6	7
67. His actions bring dignity and respect to the school and his position.	1	2	3	4	5	6	7

APPENDIX B

Leader Behavior Description Questionnaire - XII (LBDQ-XII)

LEADER BEHAVIOR DESCRIPTION QUESTIONNAIRE—Form XII

Originated by staff members of
The Ohio State Leadership Studies
and revised by the
Bureau of Business Research

Purpose of the Questionnaire

On the following pages is a list of items that may be used to describe the behavior of your supervisor. Each item describes a specific kind of behavior, but does not ask you to judge whether the behavior is desirable or undesirable. Although some items may appear similar, they express differences that are important in the description of leadership. Each item should be considered as a separate description. This is not a test of ability or consistency in making answers. Its only purpose is to make it possible for you to describe, as accurately as you can, the behavior of your supervisor.

Note: The term, "*group*," as employed in the following items, refers to a department, division, or other unit of organization that is supervised by the person being described.

The term "*members*," refers to all the people in the unit of organization that is supervised by the person being described.

Published by

Bureau of Business Research
College of Commerce and Administration
The Ohio State University
Columbus, Ohio

DIRECTIONS:

a. READ each item carefully.

b. THINK about how frequently the leader engages in the behavior described by the item.

c. DECIDE whether he (A) *always*, (B) *often*, (C) *occasionally*, (D) *seldom* or (E) *never* acts as described by the item.

d. DRAW A CIRCLE around *one* of the five letters (A B C D E) following the item to show the answer you have selected.

A = Always
B = Often
C = Occasionally
D = Seldom
E = Never

e. MARK your answers as shown in the examples below.

Example: He often acts as described..... A (B) C D E

Example: He never acts as described..... A B C D (E)

Example: He occasionally acts as described..... A B (C) D E

---

1. He acts as the spokesman of the group..... A B C D E
2. He waits patiently for the results of a decision..... A B C D E
3. He makes pep talks to stimulate the group..... A B C D E
4. He lets group members know what is expected of them..... A B C D E
5. He allows the members complete freedom in their work..... A B C D E
6. He is hesitant about taking initiative in the group..... A B C D E
7. He is friendly and approachable..... A B C D E
8. He encourages overtime work..... A B C D E
9. He makes accurate decisions..... A B C D E
10. He gets along well with the people above him..... A B C D E
11. He publicizes the activities of the group..... A B C D E
12. He becomes anxious when he cannot find out what is coming next..... A B C D E

A = Always
B = Often
C = Occasionally
D = Seldom
E = Never

13. His arguments are convincing.....	A	B	C	D	E
14. He encourages the use of uniform procedures.....	A	B	C	D	E
15. He permits the members to use their own judgment in solving problems.	A	B	C	D	E
16. He fails to take necessary action.....	A	B	C	D	E
17. He does little things to make it pleasant to be a member of the group...	A	B	C	D	E
18. He stresses being ahead of competing groups.....	A	B	C	D	E
19. He keeps the group working together as a team.....	A	B	C	D	E
20. He keeps the group in good standing with higher authority.....	A	B	C	D	E
21. He speaks as the representative of the group.....	A	B	C	D	E
22. He accepts defeat in stride.....	A	B	C	D	E
23. He argues persuasively for his point of view.....	A	B	C	D	E
24. He tries out his ideas in the group.....	A	B	C	D	E
25. He encourages initiative in the group members.....	A	B	C	D	E
26. He lets other persons take away his leadership in the group.....	A	B	C	D	E
27. He puts suggestions made by the group into operation.....	A	B	C	D	E
28. He needles members for greater effort.....	A	B	C	D	E
29. He seems able to predict what is coming next.....	A	B	C	D	E
30. He is working hard for a promotion.....	A	B	C	D	E
31. He speaks for the group when visitors are present.....	A	B	C	D	E
32. He accepts delays without becoming upset.....	A	B	C	D	E
33. He is a very persuasive talker.....	A	B	C	D	E
34. He makes his attitudes clear to the group.....	A	B	C	D	E
35. He lets the members do their work the way they think best.....	A	B	C	D	E
36. He lets some members take advantage of him.....	A	B	C	D	E

A = Always
B = Often
C = Occasionally
D = Seldom
E = Never

37. He treats all group members as his equals	A	B	C	D	E
38. He keeps the work moving at a rapid pace	A	B	C	D	E
39. He settles conflicts when they occur in the group	A	B	C	D	E
40. His superiors act favorably on most of his suggestions	A	B	C	D	E
41. He represents the group at outside meetings	A	B	C	D	E
42. He becomes anxious when waiting for new developments	A	B	C	D	E
43. He is very skillful in an argument	A	B	C	D	E
44. He decides what shall be done and how it shall be done	A	B	C	D	E
45. He assigns a task, then lets the members handle it	A	B	C	D	E
46. He is the leader of the group in name only	A	B	C	D	E
47. He gives advance notice of changes	A	B	C	D	E
48. He pushes for increased production	A	B	C	D	E
49. Things usually turn out as he predicts	A	B	C	D	E
50. He enjoys the privileges of his position	A	B	C	D	E
51. He handles complex problems efficiently	A	B	C	D	E
52. He is able to tolerate postponement and uncertainty	A	B	C	D	E
53. He is not a very convincing talker	A	B	C	D	E
54. He assigns group members to particular tasks	A	B	C	D	E
55. He turns the members loose on a job, and lets them go to it	A	B	C	D	E
56. He backs down when he ought to stand firm	A	B	C	D	E
57. He keeps to himself	A	B	C	D	E
58. He asks the members to work harder	A	B	C	D	E
59. He is accurate in predicting the trend of events	A	B	C	D	E
60. He gets his superiors to act for the welfare of the group members	A	B	C	D	E

A = Always
B = Often
C = Occasionally
D = Seldom
E = Never

61. He gets swamped by details	A	B	C	D	E
62. He can wait just so long, then blows up	A	B	C	D	E
63. He speaks from a strong inner conviction	A	B	C	D	E
64. He makes sure that his part in the group is understood by the group members	A	B	C	D	E
65. He is reluctant to allow the members any freedom of action	A	B	C	D	E
66. He lets some members have authority that he should keep	A	B	C	D	E
67. He looks out for the personal welfare of group members	A	B	C	D	E
68. He permits the members to take it easy in their work	A	B	C	D	E
69. He sees to it that the work of the group is coordinated	A	B	C	D	E
70. His word carries weight with his superiors	A	B	C	D	E
71. He gets things all tangled up	A	B	C	D	E
72. He remains calm when uncertain about coming events	A	B	C	D	E
73. Hs is an inspiring talker	A	B	C	D	E
74. He schedules the work to be done	A	B	C	D	E
75. He allows the group a high degree of initiative	A	B	C	D	E
76. He takes full charge when emergencies arise	A	B	C	D	E
77. He is willing to make changes	A	B	C	D	E
78. He drives hard when there is a job to be done	A	B	C	D	E
79. He helps group members settle their differences	A	B	C	D	E
80. He gets what he asks for from his superiors	A	B	C	D	E
81. He can reduce a madhouse to system and order	A	B	C	D	E
82. He is able to delay action until the proper time occurs	A	B	C	D	E
83. He persuades others that his ideas are to their advantage	A	B	C	D	E

A — Always
B — Often
C — Occasionally
D — Seldom
E — Never

84. He maintains definite standards of performance.....	A	B	C	D	E
85. He trusts the members to exercise good judgment.....	A	B	C	D	E
86. He overcomes attempts made to challenge his leadership.....	A	B	C	D	E
87. He refuses to explain his actions.....	A	B	C	D	E
88. He urges the group to beat its previous record.....	A	B	C	D	E
89. He anticipates problems and plans for them.....	A	B	C	D	E
90. He is working his way to the top.....	A	B	C	D	E
91. He gets confused when too many demands are made of him.....	A	B	C	D	E
92. He worries about the outcome of any new procedure.....	A	B	C	D	E
93. He can inspire enthusiasm for a project.....	A	B	C	D	E
94. He asks that group members follow standard rules and regulations.....	A	B	C	D	E
95. He permits the group to set its own pace.....	A	B	C	D	E
96. He is easily recognized as the leader of the group.....	A	B	C	D	E
97. He acts without consulting the group.....	A	B	C	D	E
98. He keeps the group working up to capacity.....	A	B	C	D	E
99. He maintains a closely knit group.....	A	B	C	D	E
100. He maintains cordial relations with superiors.....	A	B	C	D	E

APPENDIX C

Introductory Letter requesting permission to participate in Study

Description of Study

CITY OF BALTIMORE

WILLIAM DONALD SCHAEFER, Mayor

DEPARTMENT OF EDUCATION

REGIONAL SUPERINTENDENT, REGION V
4849 Pimlico Road
Baltimore, Maryland 21215

April 1, 1978

Dear

Is there such a person as a creative school administrator? Opinions differ, but there is a general agreement that creative leadership is needed if public schools are to fulfill their role in this rapidly changing society. Unfortunately, there are few research findings available concerning the relationship between creativity and leader behavior.

To explore this relationship, a study of leader behavior in Maryland public schools is being made. A short description of the proposal is set forth in the enclosure. As the leader of your school, you and the members of your staff have been selected as one of the fifty schools to be invited to participate. Generally, your participation will require a total of 45 minutes of your time and a 1/2 hour of your teachers' time. By participating in a study of this nature, you will make a significant contribution to knowledge about the field of school administration.

After reading the short description of the study, if you agree to participate, please return the enclosed post card with the requested information. If you do not choose to participate, please indicate so and return the post card to me.

Thank you for your consideration. I am looking forward to hearing from you soon.

Respectfully yours,

Earl T. Matthews

Earl T. Matthews
Regional Specialist
Community and Student Affairs

ETM

Enclosure

DESCRIPTION OF STUDY

TITLE:

A Study of Relationship Between Perceptions of Leadership Behavior, Creativity and Effectiveness of Secondary School Principals in Maryland.

SPONSOR:

Earl T. Matthews, doctoral student at the University of Maryland, College Park. Advisors: Dr. L. Morris McClure,Dr. Clayton Stunkard, Dr. James Carbone, and Dr. J. Paul Anderson.

SAMPLE:

Fifty schools choosen at random throughout the state.

SOURCE OF DATA:

A. A test of creativity and short data form to be completed by the principal. Maximum time needed: approximately forty-five minutes.

B. A Leadership Behavior Description Questionnaire to be completed by fifteen randomly selected teachers within your building. Maximum time needed: approximately thirty minutes.

C. A Check List for the Evaluation of Secondary Principals (CLESP) to be completed by responderts. Each teacher within your building will be requested to complete this instrument which is designed to measure the degree of effectiveness of principals in specific leadership characteristics. Maximum time needed: approximately twenty minutes.

DATA COLLECTION PROCEDURE:

Generally, the data will be collected via mail. Each participating school will receive sufficient pre-packaged materials for distribution to teachers. Teachers may complete the instrument at their leisure and return it in a sealed envelope (provided by me) to your designated collection point. The creative test will be taken by you under the circumstances outlined in the directions. After completion and collection of data all materials should be returned to the researcher in the pre-addressed envelope enclosed. Arrangements for a visit can be made if requested.

SAFEGUARDS OF IDENTITY:

Names of individuals or schools will not be disclosed.

AVAILABILITY OF RESULTS:

The results of the study will be made available to those participating upon request. Request may be made during the return of completed materials.

APPENDIX D

Introductory Letter - Baltimore City

CITY OF BALTIMORE

WILLIAM DONALD SCHAEFER, Mayor

DEPARTMENT OF EDUCATION
REGIONAL SUPERINTENDENT, REGION V
4849 Pimlico Road
Baltimore, Maryland 21215

May 3, 1977

Mr. Robert Armacost
Deputy Superintendent
Center for Planning, Research
and Evaluation
3 East 25th Street
Baltimore, Maryland 21218

Dear Mr. Armacost:

Thank you for the interest that you expressed in my research topic during a recent phone conversation (April 23, 1977). As you will recall I am a doctoral student at the University of Maryland, College Park, and have selected for research an examination of the relationship between "perceptions of leadership behavior, creativity, and effectiveness of secondary school principals in the Baltimore City Public School System." The findings of the study should assist our system as it develops new guidelines for the evaluation of administrators. Further, these findings should be helpful to us as we review our procedures for identification, selection, and placement of administrators.

There is a great deal of research which points to the principal as the school's potential change agent and also identifies him as the most influential person within the school. Studies have shown that the principal is the chief implementor of change and innovation and is in a special position to foster or to stifle any attempts at innovation. There is also much information in the literature which relates the behaviors of the school principal to success or failure of innovation. Although the psychology of change and leadership has been extensively researched, very little of it has been put into a form which could be useful to the principal. As a result, the principal often operates within an historical perspective, independent and unaware of current leadership research and theory. Hopefully, my study would be one effort to eliminate this flaw.

Generally, the procedures that will be used for this are as follows:

1. If you agree to participate, you will be asked to submit the names of all secondary principals under your jurisdiction who have been in the same school as principal for at least two years. Using randomization and coding prodecures each participating principal will be given a coded name. These coded names will be utilized throughout the study with the actual names only known by the researcher.

2. Utilizating the suggestion you gave during an earlier conversation, principals will be contacted during the summer to solicit their participation in the study and for the administering the AC Test of Creative Ability. This is a paper-pencil test which can be administered individually or to groups. The test is designed to measure the quanity and uniqueness of the ideas an individual can produce in a given situation. Test time is 45 minutes.

3. Beginning in late October each identified secondary school staff will be administered the Check List for the Evaluation of Secondary Principals (CLESP). CLESP is an instrument designed to measure the degree of effectiveness of principals in specific leadership characteristics. This will yield a profile of a principal's leadership traits as judged by his staff. Again appropriate procedures will be used to insure that individual responses remain annonymous.

4. Random samples of 10% (minimum 4 - maximum 10) of teachers from each of the identified schools will be administered the Leader Behavior Description Questionnaire Form XII (LBDQ - XII) at a time that is convenient to the school. The LBDQ - XII is designed to measure leader behavior objectively in terms of its frequency of occurence in several areas. Testing Time is 15 minutes.

While the procedure may sound technical, it is described somewhat fully to assure the professional nature of the research study. All of the final results and conclusions will, of course, be forwarded to you. I must emphasize the fact that the principal will be asked to give no more than 1 hour of his time and teachers no more than 45 minutes of their time. Also, that the identifity of the subjects will remain annonymous.

Please feel free to contact me at my home 664-7557 or on extension 6-0925 to answer any questions.

Thanking you in advance for your cooperation and I am looking forward to an early reply.

Sincerely,

Earl T. Matthews
Regional Specialist
Community and Student Affairs

Enclosure

ETM/mm

APPENDIX E

Memo from Deputy Superintendent - Baltimore City

Robert W. Armaocst

FROM		CITY of BALTIMORE MEMO	128
NAME & TITLE	Robert W. Armaocst, Deputy Superintendent		
AGENCY NAME & ADDRESS	Center for Planning, Research, and Evaluation		
SUBJECT	Research Proposal		

TO

DATE: February 15, 1978

Secondary Principals

We are asking your assistance in a research study to determine the relationship between perceptions of leadership behavior, creativity, and effectiveness of secondary school principals in the Baltimore City School System. This study is being conducted by Earl T. Matthews, a doctoral student at the University of Maryland, College Park and a member of our system's staff. The findings should be helpful to our system as we review our guidelines for the evaluation, identification, selection, and placement of administrators. Additionally, the findings should be helpful and applicable as you operate your school on a daily basis.

Your school has been identified as a possible participant in this study. Generally, your participation will require a total of 45 minutes of your time and 1/2 hour of your teachers' time. Additionally, the identity of all subjects will remain annonymous. A summary of the findings will be forwarded to you upon request.

Within the next 2-3 weeks Mr. Matthews will be contacting you to arrange an appointment to discuss the details of the study. Your participation and that of your teachers is, of course, voluntary.

Thank you in advance for your serious consideration of this request.

RWA:ap

APPENDIX F

Instructions for Individual Teachers

March,1978

Dear Colleague:

There is general agreement that creative leadership is needed if public schools are to fulfill their role in this rapidly changing society. Unfortunately, there are few research findings available concerning the relationship between creativity and leader behavior.

To explore this relationship, a study of leader behavior in Maryland public schools is being made. By participating in a study of this nature, you will make a significant contribution to knowledge about the field of school administration.

Please remember:

1. The responses you make will be confidential.
2. Do not place your name on the questionnaire(s).
3. The number on the questionnaire refers to your school number and is used only for data processing.
4. After you have completed the questionnaire(s), place it in the envelope you received and return the sealed evelope to your principal's office.
5. The principal will place all sealed envelopes in a larger return envelope and all questionnaires will be mailed at the same time.

Again may I express my sincere appreciation for your participation in this study.

Sincerely,

Earl T. Matthews

APPENDIX G

Introductory Letter - All Participating Principals

March, 1978

Dear Administrator:

Thank you for agreeing to participate in our research project concerning the relationship between perceptions of leadership behavior, creativity, and effectiveness of secondary school principals in the Baltimore Public School System as outlined in the memo of February 15, 1978, from Deputy Superintendent Robert W. Armacost. The fact that you are willing to take time from your busy schedule to assist indicates your concern that prospective and practicing principals are made aware of these relationships; thus, becoming better prepared and more informed about school administration.

Enclosed you will find: (1.) a packet of materials for each teacher (includes directions, testing instrument, and return envelope) (2.) test of creativity to be taken by you, and (3.) large envelope(s) for the returning of information to me by you. Please note that the number that appears on the measurement instruments refers to the school and is used only for data processing. All responses made will be confidential.

In reference to the "AC Test of Creative Ability," that is to be taken by you, please follow explicitly the directions outlined on the front of the booklet. Please note at the end of each section the amount of time it took for you to complete that section. Also, it would be helpful if you supply the number of years that you have been the principal of your building in the space provided.

After the sets of instruments have been completed (teachers and yours) it is requested that they be returned in the enclosed self-addressed envelope. Your prompt response will be greatly appreciated.

Again, may I extend my sincere thanks to you for consenting to participate in this study. Your cooperation will help insure success in acquiring the information needed for the completion of the research.

Sincerely,

Earl T. Matthews

APPENDIX H

AC Test of Creative Ability

AC TEST OF CREATIVE ABILITY

(Revised Short Form B)

Please fill in: No. 134

Name _____

Age _____ Sex _____ Date _____

Occupation _____

_____

Developed by: AC Spark Plug Division General Motors Corporation

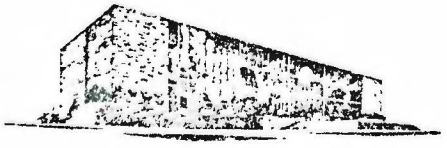
Directions:

In this booklet there are three parts of a test of creative ability. You will take the test one part at a time, beginning when the examiner gives the signal and stopping when the examiner says "Stop!" The length of time allowed for each part of the test is given at the top of the page where that part begins. Pace yourself so that you have enough time to try all of the problems in each part. Do not spend all of your time on one or two problems.

If you are writing when the signal to stop is given, you will be allowed time to complete the item on which you are working.

DO NOT TURN THIS PAGE UNTIL
YOU GET THE SIGNAL.

TMVF-132-R1
3-6-1000



CHARLES STEWART MOTT BUILDING

Published by Industrial Relations Center, 1225 E. 60th Street, Chicago, Ill. 60637

PART I -- 20 MINUTES

Below are listed five situations. Some of them are usual occurrences, others not so common. After each situation, indicate as many possible consequences as you can. You may supply any information or details that you wish. In other words, think of all the things that might happen as a result of the situation.

A. A car is approaching a curve at very high speed. In the car are a man, his wife, and their three small children. Just beyond the curve is a house built very close to the road. The right front tire blows out, and the driver loses control of the car.

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

B. A small barrel of highly combustible cleaning fluid has spilled in one of the aisles of a large industrial plant. The fluid has covered only a small area of the floor and has not been noticed. The shift will change in a few minutes, and it is certain that a number of people who are smoking will pass along the aisle.

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

C. Late at night, the phone in a house rings repeatedly on several separate occasions. For some reason, the man in the house sleeps through and fails to answer the call. Since the phone rings a number of times, it is obvious that the call is very important.

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

D. A postman starting out on his delivery route is hit by a passing car. While his injuries are minor, most of the mail is thrown into a curb grate and thus, into the sewer. By the time workmen arrive and go down in the sewer, all the pieces of mail have been carried away. The mail cannot be recovered, and the post office has no way of knowing whom the mail was intended for.

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

E. During a violent mountain snowstorm, a coast-to-coast train becomes stranded. While there is plenty of food on the train, the surrounding countryside is completely snowbound. It is apparent that no one can continue his trip for at least several days.

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

STOP HERE! DO NOT TURN PAGE UNTIL YOU GET THE SIGNAL.

PART II -- 10 MINUTES

Below are listed five statements which you are to assume are true. Give as many reasons or explanations as you can to account for the truth of these statements.

A. Grade school children are found to have, on the average, deeper (lower-pitched) voices than those of a generation ago.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

B. During several monthly intervals in Michigan, there have been more fatal accidents of all kinds on Thursday than on any other day of the week.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

C. Bostonians consume, on the average, two and one-half times as much cream as New Yorkers and three times as much as Philadelphians.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

D. Babies born in the months of October and November have better bones, on the average, than those born in the other ten months of the year.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

E. Corn and tomatoes planted in alternate rows in the same field will grow 25 to 30% better than if planted separately.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

STOP HERE! DO NOT TURN PAGE UNTIL YOU GET THE SIGNAL.

PART III -- 15 MINUTES

Below are listed five common objects. List all the possible uses to which these objects might be put (both uses that you have seen and uses that you can imagine).

A. A wooden pencil

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

B. A straight chair

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

C. A newspaper

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

D. A cardboard box

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

E. A broom

1. _____ 8. _____
2. _____ 9. _____
3. _____ 10. _____
4. _____ 11. _____
5. _____ 12. _____
6. _____ 13. _____
7. _____ 14. _____

STOP HERE! CLOSE BOOKLET.

SCORE SHEET

AC TEST OF CREATIVE ABILITY
(Revised Short Form B)

Part	Raw Score	Standard Score	
I			
II			
III			
TOTAL	Add Standard Scores for Parts I, II, & III		Standard Score

APPENDIX I

Data for CLESP Reported by Maglaras

TABLE

CLESP CATEGORY AND TOTAL RATINGS OF THE PRINCIPALS BY THE STAFF OF THE "EFFECTIVE" AND "LESS EFFECTIVE" SCHOOL SAMPLES, t VALUES, AND CATEGORY TO TOTAL SCORE CORRELATIONS

Category	Total sample of "effective" and "less effective" schools				t Value (effective to less effective)	Category to total score correlation
	"Effective" N=197		"Less effective" N=190			
	Mean $\bar{x}$	S.D. s	Mean $\bar{x}$	S.D. s	t	r
1. Supervision	38.23	8.49	33.67	9.89	4.62**	.816
2. Curriculum	25.39	6.39	22.96	66.55	4.45**	.846
3. Communications	33.60	9.32	32.36	7.72	1.42	.900
4. Technical Skills	32.79	8.31	31.29	7.86	1.82*	.871
5. Decision-making	41.31	12.11	39.63	10.43	1.46	.924
6. Human Relations	19.72	5.99	19.03	5.74	1.15	.882
7. Conceptual Skills	38.38	10.32	35.42	8.72	3.04**	.945
8. Professional Educator	39.93	10.14	37.66	9.73	2.24*	.931
9. Person	57.37	13.83	54.95	12.84	1.78*	.924
Total score	327.24	77.48	306.97	70.60	2.68**	.984

*Significant at the .05 level

**Significant at the .01 level

TABLE

CLESP CATEGORY AND TOTAL EVALUATIONS SCORES
OF EACH PRINCIPAL AS RATED BY HIS STAFF

Category	School identification number and number of respondents per school*							
	0 N=74		1 N=37		22 N=47		3 N=32	
	Mean $\bar{x}$	S.D. s	Mean $\bar{x}$	S.D. s	Mean $\bar{x}$	S.D. s	Mean $\bar{x}$	S.D. s
1. Supervision	31.32	10.78	36.98	7.32	31.95	9.02	37.82	9.15
2. Curriculum	21.96	7.03	26.08	4.92	20.15	6.40	25.21	5.00
3. Communications	30.13	8.36	34.99	5.94	30.98	7.08	36.56	6.26
4. Technical Skills	29.56	7.66	34.65	5.78	30.09	9.31	33.19	6.29
5. Decision-making	37.33	10.65	43.03	8.72	37.01	10.32	44.77	8.80
6. Human Relations	18.02	6.09	20.16	4.31	17.22	5.20	22.59	5.29
7. Conceptual Skills	33.62	9.20	38.74	5.98	31.82	7.99	40.97	7.15
8. Professional Educator	37.47	9.36	42.69	6.40	31.52	9.56	41.14	9.01
9. Person	52.43	12.94	63.41	9.32	47.91	10.68	61.06	10.95
Total score	291.82	73.62	340.73	50.58	278.65	65.14	343.31	60.15

*Throughout this study the "less effective" sample includes schools 0 through 3, and the "effective" sample includes schools 6 through 9.

TABLE (continued)

Category	School identification number and number of respondents per school							
	6 N=30		7 N=64		8 N=60		N= N=43	
	Mean $\bar{x}$	S.D. s	Mean $\bar{x}$	S.D. s	Mean $\bar{x}$	S.D. s	Mean $\bar{x}$	S.D. s
1. Supervision	42.09	7.52	39.35	7.99	39.75	9.34	31.81	10.11
2. Curriculum	28.52	6.28	26.31	5.77	26.16	5.99	23.12	6.89
3. Communications	36.86	9.32	35.81	8.15	31.84	9.95	30.58	8.48
4. Technical Skills	33.68	7.47	33.88	7.69	31.68	9.41	32.13	7.83
5. Decision-making	43.92	11.69	44.52	10.42	38.85	12.39	38.28	12.79
6. Human Relations	20.83	5.58	21.35	5.48	17.80	5.80	19.26	66.42
7. Conceptual Skills	42.01	9.79	39.81	8.98	37.02	10.75	35.80	10.88
8. Professional Educator	42.28	10.68	41.20	8.21	38.11	11.32	39.03	10.04
9. Person	60.41	13.96	60.41	11.13	52.50	15.06	57.71	13.66
Total Score	350.59	75.57	342.63	65.91	313.72	82.44	307.72	80.38

APPENDIX J

LBDQ-XII Means and Standard Deviations

Reported by Stogdill

Table Means and Standard Deviations

Subscale	Army Division		Highway Patrol		Aircraft		Ministers		Community Leaders	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1. Representation	20.0	3.0	19.9	2.8	19.8	2.8	20.4	2.4	19.6	2.4
2. Demand Reconciliation					19.2	2.8	19.8	3.1	19.7	3.3
3. Tolerance Uncertainty	36.2	4.7	35.6	4.6	33.2	6.2	37.5	6.3	37.7	5.6
4. Persuasiveness	38.3	6.2	37.9	5.9	36.5	5.5	42.1	4.7	39.5	5.5
5. Initiating Structure	38.6	5.7	39.7	4.5	36.6	5.4	38.7	4.9	37.2	5.7
6. Tolerance Freedom	35.9	6.5	36.3	5.3	38.0	5.9	37.5	6.0	36.4	5.0
7. Role Assumption	42.7	6.1	42.7	5.3	40.9	5.6	41.5	5.4	39.8	5.6
8. Consideration	37.1	5.6	36.9	6.5	37.1	5.8	42.5	5.8	41.1	4.7
9. Production Emphasis	36.3	5.1	35.8	5.7	36.1	5.6	34.9	5.1	35.4	6.8
10. Predictive Accuracy	18.1	2.1	17.8	2.1	19.2	2.6	20.5	2.3	19.8	2.5
11. Integration	19.5	2.6	19.1	2.7						
12. Superior Orientation	39.9	4.9	39.1	5.1	38.6	4.2				
Number of Cases	235		185		165		103		57	

Table Means and Standard Deviations (continued)

Subscale	Corporation Presidents		Labor Presidents		College Presidents		Senators	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1. Representation	20.5	1.8	22.2	2.2	21.4	1.9	20.7	2.5
2. Demand Reconciliation	20.6	2.7	21.5	3.2			20.7	3.5
3. Tolerance Uncertainty	35.9	5.4	40.4	5.6	37.2	5.5	35.3	7.6
4. Persuasiveness	40.1	4.2	43.1	4.8	41.1	4.2	42.5	4.6
5. Initiating Structure	38.5	5.0	38.3	5.6	37.7	4.2	38.8	5.5
6. Tolerance Freedom	38.9	4.9	38.0	4.0	39.6	3.9	36.6	6.2
7. Role Assumption	42.7	3.5	43.3	5.5	43.5	4.5	41.0	5.7
8. Consideration	41.5	4.0	42.3	5.5	41.3	4.1	41.1	5.9
9. Production Emphasis	38.9	4.4	36.0	5.0	36.2	5.0	41.2	5.2
10. Predictive Accuracy	20.1	1.8	20.9	2.0				
11. Integration								
12. Superior Orientation	43.2	3.1			42.9	2.9		
Number of Cases	55		44		55		44	

APPENDIX K

LBDQ - XII Reliability Coefficients Reported by Stogdill

Table Reliability Coefficients (Modified Kuder-Richardson)

Subscale	Army Division	Highway Patrol	Aircraft Executives	Ministers	Community Leaders	Corporation Presidents	Labor Presidents	College Presidents	Senators
1. Representation	.82	.85	.74	.55	.59	.54	.70	.66	.80
2. Demand Reconciliation			.73	.77	.58	.59	.81		.81
3. Tolerance Uncertainty	.58	.66	.82	.84	.85	.79	.82	.80	.83
4. Persuasiveness	.84	.85	.84	.77	.79	.69	.80	.76	.82
5. Initiating Structure	.79	.75	.78	.70	.72	.77	.78	.80	.72
6. Tolerance Freedom	.81	.79	.86	.75	.86	.84	.58	.73	.64
7. Role Assumption	.85	.84	.84	.75	.83	.57	.86	.75	.65
8. Consideration	.76	.87	.84	.85	.77	.78	.83	.76	.85
9. Production Emphasis	.70	.79	.79	.59	.79	.71	.65	.74	.38
10. Predictive Accuracy	.76	.82	.91	.83	.62	.84	.87		
11. Integration	.73	.79							
12. Superior Orientation	.64	.75	.81			.66		.60	

APPENDIX L

Means and Standard Deviations for Each School

and Category of the LBDQ - XII and CLESP

CREATIVITY SCORE, EIGHT SUBTEST MEANS AND STANDARD DEVIATIONS FOR EACH SCHOOL IN THE STUDY

1	5 MEANS =	78.00	22.67	21.25	31.67	40.00	42.12	36.50	43.67	37.50	42.75	19.67	20.00	39.75	399.87
	STND DEVS =	.00	1.73	2.38	6.94	3.17	2.85	7.28	3.37	4.04	3.15	1.22	2.55	2.59	30.39
2	5 MEANS =	76.00	20.20	17.40	38.00	33.60	37.40	39.40	36.60	34.80	31.40	16.40	19.20	30.80	355.20
	STND DEVS =	.00	1.33	4.59	3.58	8.50	5.64	4.41	6.15	6.34	2.42	2.58	3.71	5.27	46.71
3	7 MEANS =	76.00	19.00	17.86	35.14	33.00	36.57	33.14	36.57	33.57	35.00	17.00	16.86	35.86	349.57
	STND DEVS =	.00	2.45	3.60	4.82	5.37	3.70	6.73	2.87	7.85	2.83	2.27	2.95	3.76	37.05
4	5 MEANS =	74.00	17.40	17.00	32.40	33.00	33.00	30.60	35.80	31.20	30.00	14.60	16.80	34.40	326.20
	STND DEVS =	.00	6.25	3.10	3.83	7.04	8.44	10.35	4.71	6.73	3.35	1.96	3.92	3.20	57.87
5	10 MEANS =	73.00	20.00	20.30	38.20	36.80	40.80	37.60	38.30	37.40	35.10	19.00	19.90	34.40	377.80
	STND DEVS =	.00	3.16	2.83	4.75	6.38	6.05	4.32	6.23	4.36	5.84	2.68	3.30	5.10	43.85
6	7 MEANS =	72.00	21.29	19.71	32.71	41.86	43.71	38.29	42.43	38.86	37.86	19.57	20.86	38.00	395.14
	STND DEVS =	.00	2.76	3.10	5.65	5.14	4.06	6.61	2.97	6.53	4.49	2.19	2.95	5.40	41.11
7	5 MEANS =	71.00	18.80	18.60	39.20	39.60	37.80	39.00	39.60	38.00	37.80	19.20	19.40	39.00	386.00
	STND DEVS =	.00	3.82	4.92	6.18	6.89	6.68	6.69	7.84	7.48	7.47	3.87	3.77	6.72	70.08
8	5 MEANS =	71.00	20.40	19.80	42.40	34.80	39.40	40.80	40.20	40.00	32.40	19.60	18.40	35.60	383.80
	STND DEVS =	.00	2.58	2.48	5.20	3.06	3.77	2.79	3.43	4.38	3.01	.80	2.24	1.20	23.34
9	10 MEANS =	71.00	20.80	17.10	30.60	34.70	40.20	33.50	40.50	32.40	38.90	17.30	16.00	35.60	357.60
	STND DEVS =	.00	1.40	4.18	5.31	6.87	4.51	8.94	6.25	7.42	5.11	3.10	4.10	2.54	46.54
10	5 MEANS =	71.00	22.60	14.20	29.40	29.80	36.00	31.00	39.00	28.20	37.00	15.80	14.60	38.80	336.40
	STND DEVS =	.00	1.20	5.88	3.50	11.87	9.55	7.27	6.81	9.37	6.13	4.79	5.78	3.71	72.20
11	7 MEANS =	71.00	21.43	18.43	28.00	35.00	39.43	30.43	39.86	31.00	37.14	17.29	16.57	36.00	350.57
	STND DEVS =	.00	2.06	3.99	6.00	6.48	5.63	8.47	2.95	7.45	3.68	2.12	3.42	3.63	39.26
12	6 MEANS =	68.00	17.50	13.50	32.00	31.33	36.50	32.83	33.17	27.17	30.67	13.50	12.50	35.67	316.33
	STND DEVS =	.00	4.23	4.86	2.58	9.01	8.06	2.48	9.75	8.51	6.92	3.99	5.44	4.92	62.24
13	6 MEANS =	67.00	18.33	18.33	34.00	33.67	33.00	36.33	33.67	34.33	29.50	15.33	16.00	31.67	334.17
	STND DEVS =	.00	3.09	4.11	.82	5.91	5.92	3.40	3.09	5.34	7.87	4.11	3.27	3.40	45.23
14	8 MEANS =	66.00	18.25	17.00	33.75	30.25	36.25	33.25	38.75	33.00	32.75	15.50	16.00	33.00	337.75
	STND DEVS =	.00	4.97	2.60	6.02	7.26	10.16	10.96	4.76	8.15	6.53	3.91	5.61	7.86	71.57
15	5 MEANS =	65.00	21.40	19.40	38.40	36.60	40.40	41.80	41.00	40.60	35.40	17.60	20.20	39.40	392.20
	STND DEVS =	.00	2.15	3.26	2.15	5.57	6.47	3.71	5.40	5.86	6.15	2.73	4.12	4.27	42.10
16	7 MEANS =	64.00	20.14	17.71	36.86	35.29	37.43	37.86	37.57	36.57	32.00	17.86	16.43	36.00	361.71
	STND DEVS =	.00	2.59	4.27	6.56	9.63	5.39	7.79	5.39	7.61	4.17	3.91	4.40	5.07	60.21
17	6 MEANS =	61.00	20.83	20.67	36.17	39.83	42.17	42.00	40.17	41.33	36.33	20.17	19.67	38.17	399.50
	STND DEVS =	.00	2.67	3.99	5.46	7.10	3.58	6.81	6.26	6.90	2.05	3.34	3.68	5.30	45.32
18	5 MEANS =	61.00	19.80	16.60	32.40	30.80	36.00	37.60	37.20	34.40	28.60	16.20	13.80	34.40	337.80
	STND DEVS =	.00	2.71	3.20	3.93	10.87	8.20	10.27	5.11	6.74	6.28	4.26	4.07	7.17	66.77
19	10 MEANS =	59.00	19.50	17.60	35.30	36.80	38.00	37.30	37.70	35.60	32.40	18.20	16.90	37.00	362.30
	STND DEVS =	.00	1.80	3.29	4.34	4.60	3.71	3.58	6.99	4.57	3.29	2.60	3.51	4.24	36.11
20	5 MEANS =	58.00	20.80	19.20	35.40	40.40	41.20	39.20	36.60	37.00	35.20	17.80	17.60	39.00	379.40
	STND DEVS =	.00	2.04	3.43	4.22	8.40	5.15	5.27	4.22	5.18	4.45	3.49	3.01	3.29	47.60
21	5 MEANS =	57.00	17.00	16.40	32.00	33.20	32.40	34.60	33.60	34.20	33.40	16.00	15.40	31.60	329.80
	STND DEVS =	.00	2.10	1.20	2.10	4.53	3.38	4.36	4.59	3.96	2.87	2.37	1.02	3.93	28.05
22	5 MEANS =	57.00	20.00	20.00	37.80	37.20	41.80	38.60	40.40	42.00	33.60	18.40	18.40	36.00	384.20
	STND DEVS =	.00	.89	1.79	4.26	4.49	.98	1.20	1.74	.89	1.20	.49	2.58	4.65	11.79
23	8 MEANS =	56.00	21.37	19.00	33.50	37.50	40.25	38.00	39.50	41.12	35.87	15.75	19.50	35.37	376.75
	STND DEVS =	.00	3.96	4.12	6.20	6.02	5.54	3.24	6.76	7.57	5.35	3.11	3.77	3.97	44.02
24	6 MEANS =	55.00	21.50	20.50	42.25	38.50	40.75	45.00	39.75	41.50	30.75	19.75	21.50	41.50	403.25
	STND DEVS =	.00	2.18	2.69	3.83	3.35	1.30	3.16	2.17	4.61	5.85	1.09	.87	2.96	14.31
25	5 MEANS =	55.00	20.40	22.80	38.00	37.80	42.20	40.80	41.40	40.00	31.80	20.40	19.00	38.40	393.00
	STND DEVS =	.00	2.54	1.60	3.58	1.60	3.31	3.66	4.63	1.26	.98	1.36	.63	1.50	15.27

26 5 MEANS =	54.00	18.80	15.60	30.80	36.00	38.40	34.00	19.00	34.60	36.80	15.40	17.40	37.40	351.00
STND DEVS =	.00	2.64	5.67	10.19	5.64	8.50	8.66	8.00	9.44	3.06	4.18	5.46	4.88	61.26
27 6 MEANS =	54.00	22.67	19.00	34.83	41.50	41.50	41.00	40.67	38.67	35.50	19.33	20.17	39.83	394.67
STND DEVS =	.00	1.60	3.16	4.06	5.06	5.16	3.78	4.03	5.68	4.86	2.21	3.44	4.45	38.26
28 5 MEANS =	53.00	19.80	20.40	39.60	31.80	40.40	42.20	38.00	43.40	33.60	19.00	17.80	35.80	381.60
STND DEVS =	.00	1.47	1.96	7.84	7.60	.80	3.49	5.76	3.14	5.39	.00	.98	2.71	22.54
29 6 MEANS =	53.00	20.75	20.25	39.12	41.50	42.50	40.25	42.50	40.25	37.75	20.75	21.88	43.50	411.00
STND DEVS =	.00	1.09	4.63	7.67	5.94	3.12	2.73	6.96	4.97	5.19	2.63	2.98	5.87	45.05
30 10 MEANS =	52.00	18.70	14.40	32.40	32.10	35.60	33.20	32.50	32.50	34.10	16.20	16.40	33.40	331.50
STND DEVS =	.00	3.13	2.49	4.82	5.75	4.00	5.04	4.57	4.39	3.75	2.68	2.76	3.83	32.84
31 6 MEANS =	52.00	20.33	20.00	31.67	41.00	41.83	33.67	41.00	35.67	38.00	18.67	18.00	38.17	378.00
STND DEVS =	.00	.94	2.24	4.68	4.69	2.67	5.06	2.71	3.94	4.47	1.60	1.73	2.73	16.86
32 11 MEANS =	51.00	21.16	17.09	33.82	34.45	43.91	36.91	39.36	37.27	38.46	18.09	19.18	39.73	379.45
STND DEVS =	.00	2.79	4.54	9.27	7.94	4.72	6.47	6.96	8.17	2.39	4.03	4.20	5.40	57.26
33 5 MEANS =	50.00	21.00	18.60	34.80	35.80	41.80	39.80	37.20	35.00	38.80	16.80	17.80	38.20	375.60
STND DEVS =	.00	1.55	1.36	2.99	.75	2.48	5.00	3.66	4.15	2.48	.75	2.79	1.47	20.98
34 6 MEANS =	50.00	18.00	17.00	36.00	33.50	35.75	35.50	36.50	36.25	31.00	16.50	16.00	32.00	344.00
STND DEVS =	.00	5.00	4.00	3.00	8.53	7.26	7.50	1.50	7.76	3.00	2.60	4.00	9.03	63.00
35 6 MEANS =	49.00	21.33	18.67	36.00	33.00	38.67	36.33	40.50	37.83	33.67	18.50	19.00	36.83	370.33
STND DEVS =	.00	2.49	2.62	1.41	7.09	6.34	2.36	4.50	6.20	6.21	2.50	3.74	5.18	47.98
36 7 MEANS =	49.00	19.71	16.14	28.14	34.71	35.71	31.00	38.57	31.29	33.71	16.86	14.43	36.29	336.57
STND DEVS =	.00	2.43	3.56	6.81	7.89	5.52	8.82	6.52	6.80	5.42	2.53	4.40	6.13	55.83
37 6 MEANS =	48.00	19.00	18.83	37.17	34.17	40.33	34.83	38.50	33.17	39.17	16.67	12.83	36.50	361.17
STND DEVS =	.00	1.41	.37	.69	2.27	4.85	4.64	3.50	3.24	6.84	.75	1.86	7.50	7.45
38 5 MEANS =	47.00	19.40	17.00	31.20	35.80	41.80	30.20	42.60	31.80	37.20	18.00	17.00	37.80	359.80
STND DEVS =	.00	2.33	4.82	5.31	7.57	3.31	9.13	3.38	5.84	4.71	2.53	4.15	4.92	43.50
39 5 MEANS =	43.00	17.00	16.00	34.00	32.80	35.00	34.00	33.60	31.80	32.40	15.80	15.80	32.80	331.00
STND DEVS =	.00	2.19	3.52	3.41	7.44	6.03	4.34	4.76	3.54	4.32	2.86	1.47	2.93	40.49
40 6 MEANS =	43.00	18.33	16.67	32.33	35.17	38.00	36.17	36.00	33.67	35.67	16.67	16.67	35.33	350.67
STND DEVS =	.00	.94	1.37	3.30	1.77	4.58	3.93	1.91	5.12	3.73	.94	.47	2.05	6.75
41 5 MEANS =	39.00	18.40	19.80	37.40	39.40	39.80	37.40	38.00	34.20	36.20	18.00	15.60	35.60	369.80
STND DEVS =	.00	2.06	2.86	3.20	8.14	7.60	4.59	4.00	1.60	2.71	2.53	1.20	3.01	40.06
42 6 MEANS =	38.00	19.00	17.33	40.17	28.00	37.00	37.67	32.67	38.00	28.83	15.67	18.50	37.33	350.17
STND DEVS =	.00	3.00	5.71	6.54	7.79	7.00	10.34	7.36	11.05	4.34	4.07	5.59	1.80	70.35
43 5 MEANS =	38.00	17.20	17.80	36.20	34.40	39.40	36.20	35.80	37.00	35.60	19.00	16.40	34.20	359.20
STND DEVS =	.00	4.21	3.71	4.40	3.38	4.32	4.02	6.52	6.42	3.56	1.67	3.72	2.32	38.98
44 6 MEANS =	38.00	22.33	15.83	28.83	37.50	40.67	31.83	39.67	32.17	36.67	18.67	17.33	37.33	358.83
STND DEVS =	.00	1.70	.90	2.67	4.89	2.29	4.18	3.99	3.98	4.11	2.21	1.49	4.57	16.08
45 5 MEANS =	35.00	20.60	20.20	38.60	40.60	43.40	41.00	40.60	41.80	36.80	19.40	21.60	42.00	408.80
STND DEVS =	.00	3.56	4.26	5.92	6.95	6.65	7.82	9.20	7.47	6.14	3.98	5.42	5.97	67.89
46 6 MEANS =	32.00	16.83	19.50	34.17	34.50	35.50	36.50	35.83	38.33	32.67	17.83	18.33	33.67	353.67
STND DEVS =	.00	.69	.76	5.11	3.69	2.14	1.50	1.77	2.98	1.25	1.95	.75	1.89	14.93
47 6 MEANS =	31.00	21.00	18.67	35.33	35.00	40.00	37.67	37.67	36.67	31.33	17.67	17.33	37.33	365.67
STND DEVS =	.00	3.27	3.09	4.11	4.24	4.97	6.13	1.70	7.41	5.44	2.36	3.30	4.11	44.90
48 4 MEANS =	68.00	20.00	20.75	37.75	42.25	40.00	40.25	38.75	41.50	36.50	20.25	20.25	38.50	396.75
STND DEVS =	.00	.71	1.48	4.15	2.38	2.35	3.34	4.44	2.87	2.69	1.09	2.95	4.39	26.98
49 4 MEANS =	54.00	20.75	18.25	35.75	35.25	40.50	38.00	39.50	36.75	33.50	17.75	18.25	39.50	373.75
STND DEVS =	.00	1.09	2.68	2.86	2.95	2.29	2.45	3.20	3.03	1.12	.83	2.49	2.18	15.22
50 6 MEANS =	45.00	19.67	19.50	37.50	42.50	41.17	40.50	37.83	41.50	36.67	17.33	19.33	34.50	388.00
STND DEVS =	.00	2.75	3.59	7.74	4.50	5.34	2.63	5.58	4.57	2.98	2.36	3.09	4.46	39.95

1 98 MEANS =	78.00	42.50	27.27	35.15	37.15	45.45	21.17	41.52	42.21	59.16	354.79
STND DEVS =	.00	7.63	6.87	7.67	7.69	10.42	4.96	9.23	9.88	13.56	70.02
2 51 MEANS =	76.00	32.96	19.76	26.61	26.27	30.49	16.14	29.80	29.02	42.47	253.55
STND DEVS =	.00	9.81	4.59	9.31	9.79	13.62	5.90	9.63	10.44	15.04	84.67
3 34 MEANS =	76.00	38.79	27.12	33.91	38.03	45.44	16.74	36.12	36.47	53.09	325.65
STND DEVS =	.00	10.51	6.47	8.63	8.73	11.01	7.21	10.63	10.61	14.87	80.50
4 29 MEANS =	74.00	38.76	26.17	34.72	33.03	40.76	20.48	39.69	39.93	57.69	329.24
STND DEVS =	.00	11.57	6.47	8.79	8.82	11.89	6.64	10.75	11.92	14.37	61.92
5 77 EA MEANS =	73.00	45.83	26.30	36.94	36.58	44.35	23.06	41.75	46.66	65.42	368.90
STND DEVS =	.00	7.73	5.63	7.99	9.30	13.87	4.83	10.00	8.16	10.54	70.50
6 44 MEANS =	72.00	45.00	29.45	39.89	38.50	48.36	23.25	45.77	45.00	62.18	377.41
STND DEVS =	.00	8.82	5.01	7.43	7.61	10.31	5.49	9.13	9.23	13.64	70.85
7 12 MEANS =	71.00	47.67	30.92	41.50	39.67	50.50	24.42	47.42	45.75	67.58	395.42
STND DEVS =	.00	6.90	3.75	6.29	6.07	10.74	3.66	7.16	9.95	8.99	55.92
8 10 MEANS =	71.00	45.61	28.94	40.44	38.28	50.67	24.56	45.50	48.50	66.17	388.67
STND DEVS =	.00	8.35	5.76	9.01	9.40	12.24	4.30	10.46	8.92	13.20	76.90
9 15 MEANS =	71.00	35.60	21.20	27.60	28.40	32.53	14.47	30.73	32.47	45.67	268.67
STND DEVS =	.00	9.62	6.38	10.12	8.31	11.77	6.42	10.62	10.87	15.58	84.79
10 53 MEANS =	71.00	33.30	22.25	30.00	27.04	34.49	16.83	33.63	34.17	48.15	280.06
STND DEVS =	.00	12.73	7.75	10.65	11.21	15.02	7.20	12.93	13.51	19.44	105.98
11 56 MEANS =	71.00	35.48	23.98	30.03	37.05	38.70	14.43	36.16	32.86	50.75	299.64
STND DEVS =	.00	9.69	5.61	9.01	7.75	10.34	7.09	9.84	10.07	14.53	75.05
12 68 MEANS =	68.00	26.68	17.54	23.62	23.88	26.43	12.07	24.72	24.10	37.60	216.63
STND DEVS =	.00	9.77	7.16	9.26	8.43	11.48	5.70	11.10	11.52	15.53	84.41
13 12 MEANS =	67.00	37.92	23.92	33.58	34.08	43.50	18.42	38.50	34.83	55.17	319.92
STND DEVS =	.00	11.46	7.76	10.92	9.74	13.48	7.36	10.93	13.54	16.98	97.46
14 84 MEANS =	66.00	38.81	25.42	37.36	36.57	45.32	20.90	40.18	41.58	62.01	348.15
STND DEVS =	.00	7.55	5.08	7.60	7.03	9.01	5.73	8.82	8.90	13.57	68.31
15 16 MEANS =	65.00	44.94	27.31	37.94	34.31	44.37	21.88	42.87	43.87	61.56	359.06
STND DEVS =	.00	9.63	6.94	10.76	11.50	14.92	6.82	12.15	12.14	15.93	97.33
16 63 MEANS =	64.00	40.03	25.33	36.17	33.97	42.65	19.94	37.43	40.33	59.29	335.14
STND DEVS =	.00	7.34	4.70	6.37	6.68	8.90	4.74	8.34	8.11	10.49	60.19
17 50 MEANS =	61.00	40.56	25.02	34.56	36.00	42.46	18.60	38.66	37.74	57.58	331.18
STND DEVS =	.00	10.55	7.07	9.19	8.69	11.58	6.10	10.44	11.16	13.54	82.33
18 15 MEANS =	61.00	31.93	21.33	29.00	27.40	32.60	16.00	30.07	31.87	49.60	269.80
STND DEVS =	.00	12.87	8.40	11.35	10.22	12.76	6.23	11.28	12.67	14.41	94.61
19 52 MEANS =	59.00	40.46	24.94	33.67	30.19	40.71	20.69	37.46	40.29	57.54	325.96
STND DEVS =	.00	8.71	5.54	7.90	8.94	10.44	5.13	8.81	8.82	13.22	70.48
20 19 MEANS =	58.00	39.89	26.16	37.58	35.95	43.16	21.05	40.89	40.37	58.11	343.16
STND DEVS =	.00	9.53	5.76	6.98	7.24	9.16	5.31	9.21	9.78	12.68	68.16
21 65 MEANS =	57.00	36.78	23.40	32.31	31.71	38.65	19.51	36.14	37.60	53.58	309.68
STND DEVS =	.00	9.44	5.65	8.54	7.79	11.30	5.84	10.02	10.41	13.20	76.46
22 22 MEANS =	57.00	35.32	23.60	33.82	31.32	39.86	17.66	35.64	40.36	59.27	316.95
STND DEVS =	.00	11.85	6.58	9.72	9.05	13.06	7.86	11.21	10.70	14.31	87.07
23 30 MEANS =	56.00	31.95	18.63	25.66	25.66	30.97	15.92	28.53	30.50	44.29	252.11
STND DEVS =	.00	11.63	6.86	10.30	9.66	13.76	6.48	12.48	12.80	16.68	94.68
24 55 MEANS =	55.00	43.71	27.36	38.55	32.82	42.73	23.58	41.53	44.58	63.93	358.78
STND DEVS =	.00	8.79	5.81	8.35	9.85	11.60	4.90	10.05	8.91	11.40	72.51
25 19 MEANS =	55.00	41.11	27.32	38.26	38.37	48.63	22.37	42.95	44.26	64.32	367.58
STND DEVS =	.00	10.85	6.10	9.52	8.18	13.97	6.63	11.10	11.88	14.95	89.60

26 12 MEANS =	54.00	41.42	26.42	35.42	36.42	44.50	21.33	42.75	42.50	60.50	356.50
STND DEVS =	.00	7.34	5.90	7.78	5.80	8.91	4.23	8.05	8.81	10.86	60.56
27 25 MEANS =	54.00	41.12	25.72	37.92	36.44	43.48	22.88	41.40	41.32	62.12	353.00
STND DEVS =	.00	7.29	5.39	6.62	6.38	10.05	4.01	7.31	7.38	10.10	55.35
28 11 MEANS =	53.00	37.55	24.09	33.73	32.09	43.27	21.18	35.36	36.64	54.45	318.36
STND DEVS =	.00	9.73	8.22	8.32	9.04	11.21	4.95	11.25	11.98	12.63	78.27
29 35 MEANS =	53.00	40.57	25.60	36.03	34.26	42.60	20.89	39.14	38.83	56.03	335.00
STND DEVS =	.00	10.08	6.47	9.62	9.51	11.96	5.55	11.15	11.49	15.13	87.75
30 87 MEANS =	52.00	34.53	23.52	31.56	28.54	35.83	18.08	34.08	37.09	50.47	293.70
STND DEVS =	.00	10.33	6.17	8.97	9.08	12.04	6.16	10.48	10.58	13.59	80.42
31 40 MEANS =	52.00	36.10	23.10	32.35	36.12	41.85	13.77	32.47	36.65	56.92	309.35
STND DEVS =	.00	10.37	6.64	8.40	7.40	10.04	6.39	10.08	9.14	14.25	74.68
32 24 MEANS =	51.00	38.25	24.08	34.12	33.17	39.00	17.33	36.50	38.42	50.62	311.50
STND DEVS =	.00	9.85	6.03	9.37	9.83	13.51	6.67	11.20	11.39	17.71	89.76
33 63 MEANS =	50.00	45.10	26.98	40.83	38.76	48.98	23.08	45.65	46.57	64.30	382.25
STND DEVS =	.00	10.54	6.60	8.99	11.14	14.68	5.59	10.90	10.17	14.35	84.81
34 75 MEANS =	50.00	41.88	26.69	38.53	38.08	47.25	23.35	43.29	43.36	63.61	366.05
STND DEVS =	.00	8.48	5.84	7.93	7.23	9.95	5.08	9.31	9.82	12.51	69.17
35 23 MEANS =	49.00	42.22	25.96	39.22	35.57	43.78	23.09	40.39	43.83	64.09	358.13
STND DEVS =	.00	11.08	6.95	7.43	10.06	12.81	5.96	10.86	12.02	13.75	85.58
36 21 MEANS =	49.00	35.76	21.57	28.67	27.48	36.71	17.14	32.43	34.19	49.90	283.86
STND DEVS =	.00	9.67	6.20	9.57	9.33	10.92	6.12	10.11	9.35	9.95	72.89
37 29 MEANS =	48.00	39.38	25.52	34.90	33.97	41.93	21.28	39.41	39.10	58.34	333.83
STND DEVS =	.00	9.97	6.08	8.81	8.98	10.87	5.34	9.49	9.47	14.01	77.98
38 15 MEANS =	47.00	44.40	26.73	35.73	36.80	44.67	20.73	40.00	41.47	59.00	349.53
STND DEVS =	.00	9.60	7.42	10.10	10.15	13.95	5.77	11.40	12.78	15.89	94.20
39 12 MEANS =	43.00	42.25	27.75	38.17	35.33	42.67	22.33	39.92	42.58	66.50	357.50
STND DEVS =	.00	7.56	5.85	7.91	7.32	8.82	5.01	9.41	8.23	9.20	63.77
40 10 MEANS =	43.00	41.40	26.50	35.20	31.60	42.60	21.00	38.40	39.40	56.10	332.20
STND DEVS =	.00	8.88	5.68	10.26	12.81	14.09	5.71	10.68	11.48	14.47	90.08
41 12 MEANS =	39.00	31.50	20.33	26.83	26.58	34.00	14.58	30.00	32.00	40.08	255.92
STND DEVS =	.00	11.74	6.88	9.46	9.21	12.70	4.99	9.62	11.20	14.73	83.26
42 60 MEANS =	38.00	43.73	28.90	42.32	38.87	50.43	24.83	45.63	46.58	68.25	389.55
STND DEVS =	.00	8.07	4.74	6.40	6.93	9.46	4.12	7.59	7.33	8.74	57.49
43 23 MEANS =	38.00	38.96	22.91	32.48	32.91	41.74	19.26	36.00	37.09	55.26	316.61
STND DEVS =	.00	17.08	10.85	14.42	14.61	19.77	9.03	16.49	16.76	23.15	139.62
44 53 MEANS =	38.00	36.85	24.72	32.28	33.81	41.08	16.55	37.06	34.89	48.06	305.28
STND DEVS =	.00	11.09	6.73	8.71	9.71	12.21	6.06	10.68	10.97	15.40	85.67
45 17 MEANS =	35.00	45.94	29.35	39.00	36.71	48.29	24.00	45.06	46.53	67.24	382.12
STND DEVS =	.00	7.48	5.65	6.89	8.58	9.15	4.64	8.50	8.93	8.82	60.46
46 39 MEANS =	32.00	42.38	29.54	35.51	34.15	42.87	20.46	39.77	40.33	53.31	338.33
STND DEVS =	.00	9.68	4.47	7.75	6.89	7.86	4.60	7.34	6.07	10.82	58.99
47 22 MEANS =	31.00	41.50	27.68	35.68	34.82	41.41	19.64	40.05	42.68	61.50	344.95
STND DEVS =	.00	8.43	4.39	7.41	8.48	12.16	5.63	8.41	9.69	12.53	68.21
48 48 MEANS =	68.00	46.35	29.62	40.79	40.21	52.12	24.58	46.52	49.12	70.17	399.50
STND DEVS =	.00	7.36	4.76	8.24	5.85	9.05	3.87	7.68	7.63	8.00	55.23
49 26 MEANS =	54.00	44.65	27.77	36.88	39.38	48.27	23.08	46.00	45.15	66.31	377.50
STND DEVS =	.00	6.87	5.24	7.64	6.34	10.70	4.75	7.70	9.38	11.28	65.03
50 18 MEANS =	45.00	45.72	29.11	39.00	37.39	46.22	25.67	47.06	46.72	66.83	383.72
STND DEVS =	.00	7.76	5.08	6.68	7.48	11.27	3.23	7.12	7.70	10.12	59.32

APPENDIX M

Means, Standard Deviations, Range, and Coefficient of Variation for Variables Measured

*MEANS, STANDARD DEVIATIONS, RANGE, AND COEFFICIENT OF VARIATION FOR VARIABLES MEASURED (N = 50)

Variable	Means	Standard Deviation	Coefficient of Variation (V)	Range
Creativity	56.38	12.58	22.31	47
LBDQ Dimensions				
1. Representation	19.86	1.54	7.75	5.9
2. Demand Reconciliation	8.27	1.92	23.21	9.3
3. Tolerance of Uncertainty	35.06	3.44	9.81	14.4
4. Persuasiveness	35.90	3.54	9.86	14.5
5. Initiating Structure	39.06	2.88	7.37	11.5
6. Tolerance of Freedom	36.83	3.53	9.58	14.8
7. Role Assumption	38.32	2.68	6.99	11.4
8. Consideration	36.26	3.80	10.47	16.2
9. Production Emphasis	34.68	3.08	8.88	14.1
10. Predictive Accuracy	17.65	1.65	9.34	7.2
11. Integration	17.70	2.18	12.31	9.4
12. Superior Orientation	36.58	2.74	7.49	12.7
Total Score	366.26	24.15	6.59	95
CLESP Dimensions				
1. Supervision	39.83	4.67	11.72	21
2. Curriculum	25.47	3.02	11.85	13.4
3. Communication	34.95	4.41	12.61	18.7
4. Technical Skills	34.06	4.17	12.24	16.3
5. Decision Making	42.22	5.64	13.35	25.7
6. Human Relations	20.13	3.56	17.68	13.6
7. Conceptual Skills	38.76	5.33	13.75	22.7
8. Professional Emphasis	39.77	5.46	13.72	25
9. Person	57.45	7.74	13.47	32.6
Total Score	332.61	41.91	12.60	182.9

*Data generated from computed means of each school (Appendix L)